OUTDOOR LIFE

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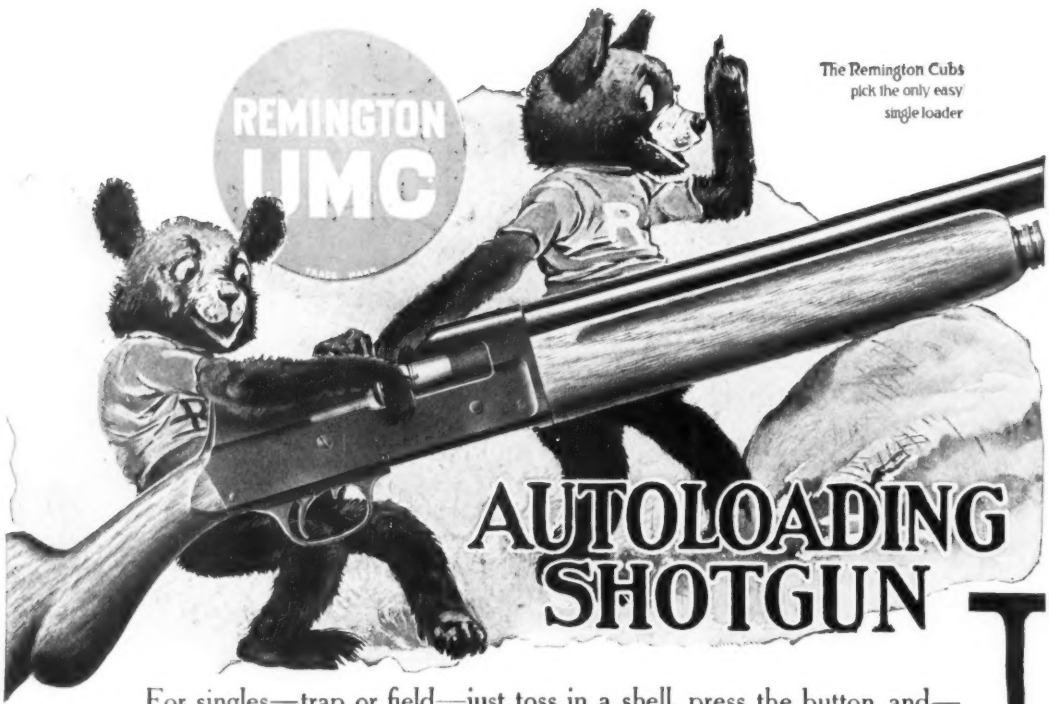

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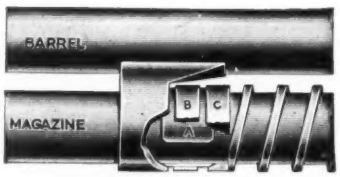

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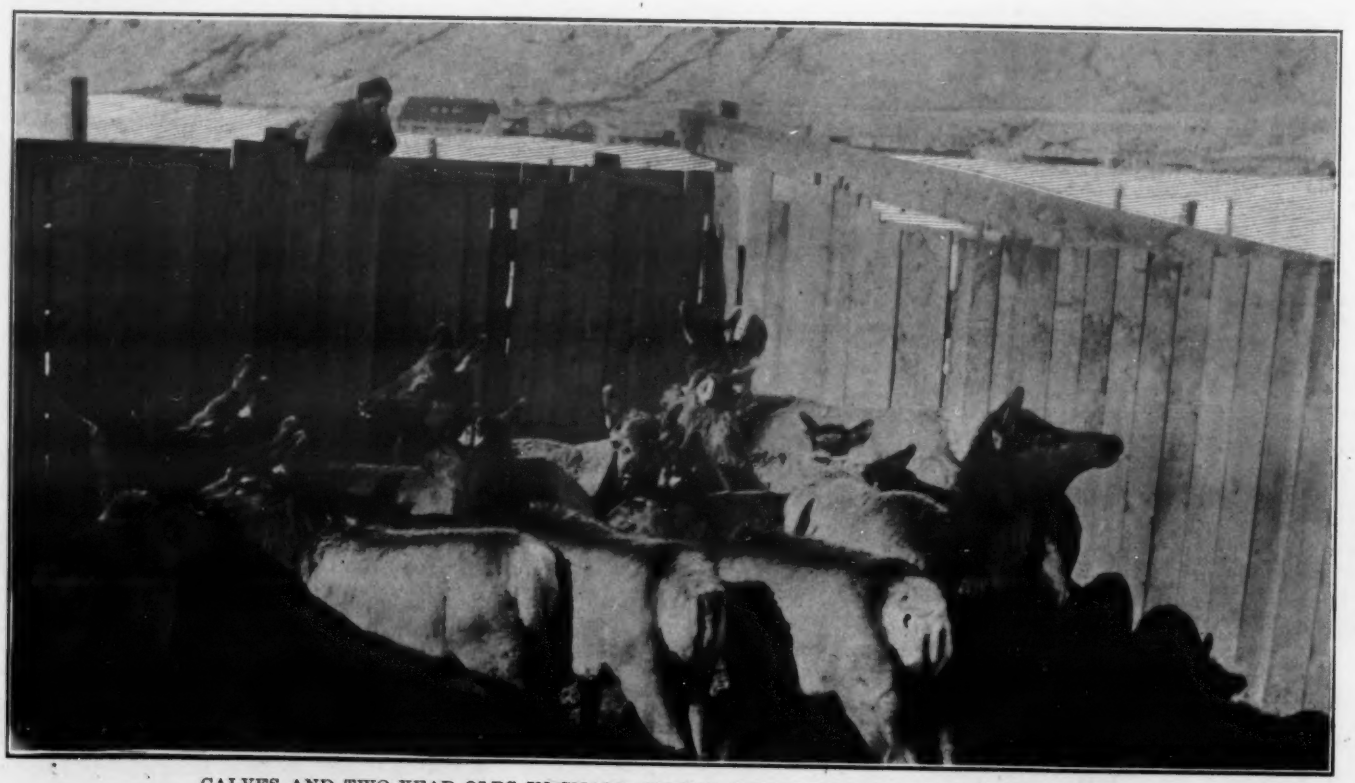

CALVES AND TWO-YEAR-OLDS IN SMALL CORRAL READY TO BE LOADED INTO WAGONS.

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OUTDOOR LIFE

Vol. XXX Number 2

TRAPPING AND SHIPPING ELK

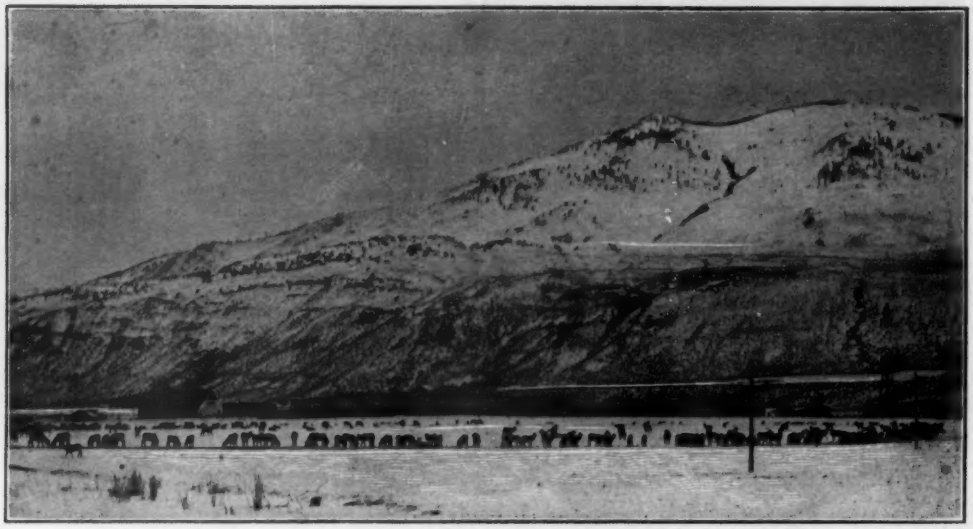
PHOTOGRAPHS BY THE AUTHOR AND W. S HOPPE

W. B. SHORE, M. D.

The first experiment in trapping and shipping elk in carload lots was made in the vicinity of Gardiner, Mont., in March, 1912. Altogether 306 elk were loaded in stock cars and shipped from Gardiner to points in Montana and Washington, where the elk were turned loose on good range. At this rate in a few years the whole mountainous region in the Northwest can be restocked with elk and at the same time the elk will not be missed from this section of the country.

Trapping elk did not prove to be as difficult an undertaking as some would anticipate nor shipping them by rail in stock cars any greater risk than shipping cattle under the same conditions.

THE FIRST. A PALACE HORSE CAR, NOT AS GOOD AS AN OPEN STOCK CAR.



ELK ON THE FLAT, NEAR GARDINER, MONT.

The elk came down upon the flats and Yellowstone valley in March, and it is the custom for the government to feed them hay at this season. A large corral about ten feet high was built on the feed grounds and the hay scattered in a string some distance from the gate of corral. Hay was also scattered around in the corral. The trapper had a long rope attached to the gate and sat in the top of a haystack some 100 feet away. As soon as the elk fed into the corral the rope was pulled and the elk were caught in the large corral. As many as eighty-one elk were caught at one time in this manner. The elk were retained in the corral, fed and watered until shipment was made.

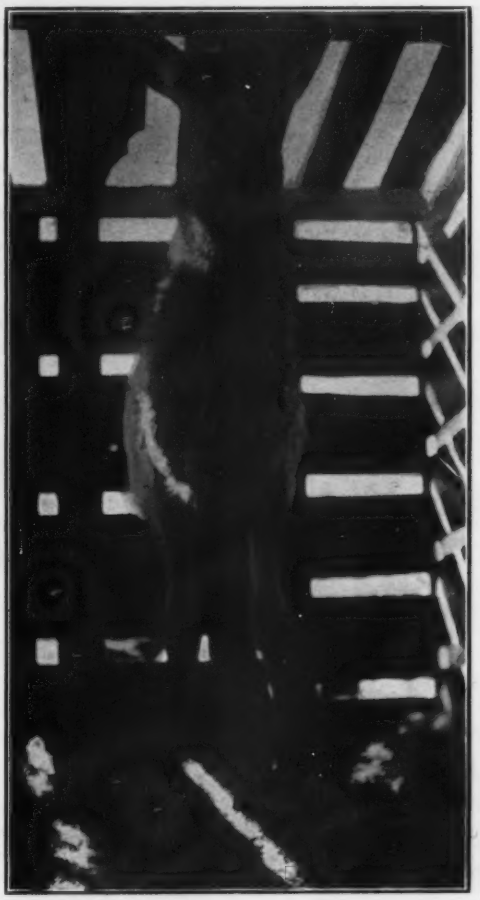
In loading, they were first driven from the large corral to a small one inside of the large one. The elk are very easy to drive and when frightened will run through the first opening they see. From the smaller corral they are driven into a small chute which leads to the wagon, which is backed up to the chute. Very little trouble was experienced in getting them to go into the

TRAPPED IN LARGE CORRAL.

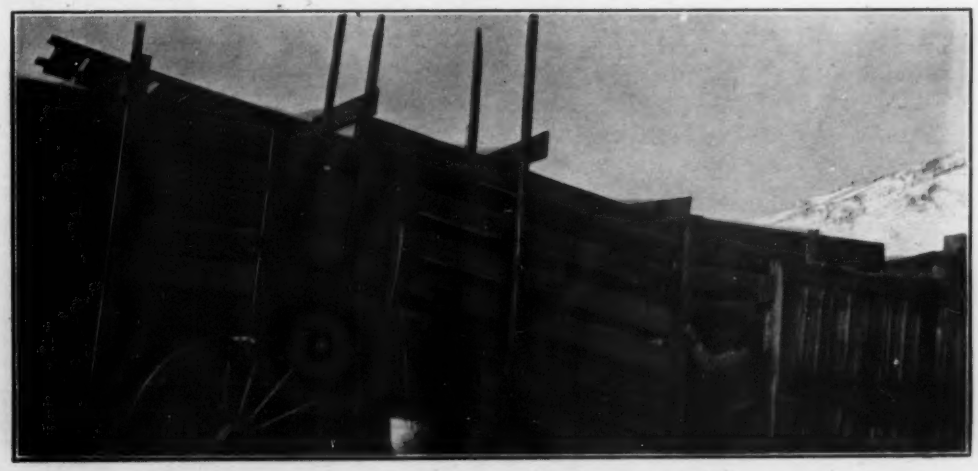
wagon. About eight elk were loaded into the wagon at a load. The wagon load of elk is then taken to the stockyards, backed up to the chute and unloaded.

The animals are a little hard to unload from the wagon and it was necessary for the men to get in among them and pull them out by the legs. They did not offer to fight at close range in the wagon, but I saw one that was let out of the corral stand on his hind legs and strike at one of the boys standing at the gate, but fortunately missed him. I don't think an elk will very often make a fight, but under some conditions he will, especially if crippled. They generally strike, with their forefeet.

The elk were not hard to load into the cars, as shown by the pictures; they walk up the runway just like cattle. The worst trouble in handling them is that which is occasioned by the crowd of onlookers, who are always present on such occasions. Elk are easily excited and it is claimed that weak calves will die from excitement. I think they get tired running around the corral and lie down and are trampled to death. One car was



A YEARLING CALF AS HE LOOKED LOADED IN WAGON.



ELK GOING INTO THE WAGON.

A CALF ELK IN THE CHUTE.

loaded early in the morning before anyone was around to excite them, and these animals were loaded without them even drawing a long breath. When loaded with a crowd around, the elk are steaming and panting, with their tongues hanging out. The same trouble was experienced unloading the elk at the various places where they were shipped. At one place one elk was killed while unloading. I think this will be avoided in the future by keeping the crowd back.

The elk that were shipped from the Yellowstone National Park were trapped and handled by Scout Henry Anderson of Gardiner, Mont.

The ones shipped from Montana were trapped and handled by Mr. Walter Hoppe on his ranch, three miles from Gardiner. Both men have lived in this country a long time and understand thoroughly how to handle a proposition of this kind.

The elk loaded on the cars at Gardiner will cost $5 per head, and perhaps

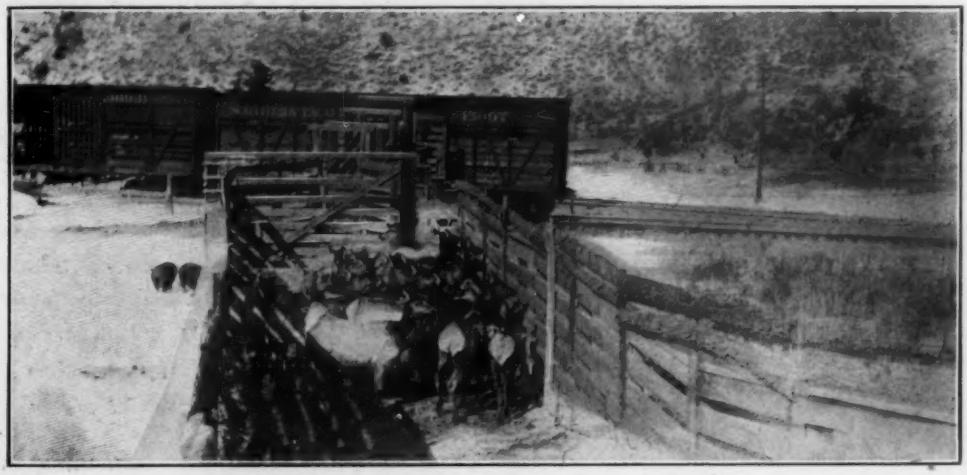
EIGHT ELK LOADED IN THE WAGON.

READY TO UNLOAD.

less, depending upon the time it takes to trap them.

It would be advisable to trap the animals earlier in the season, as they are stronger in January than later, and would stand shipping and handling much better.

We have at least one thousand elk per annum to spare, which does not represent the yearly increase in this locality, and it would be a good thing to get rid of these elk, as the range is overstocked and overcrowding any kind of animals only means a large loss by starvation and disease. There is a disease sometimes quite prevalent among elk, commonly called "scab." It is a highly-contagious disease and kills many elk,



A CARLOAD OF ELK BEFORE STARTING TO LOAD THEM INTO CAR.

especially when the winter is severe and the elk are short of feed and crowded together in large herds.

This disease seems to be primarily a disease of the skin and causes the elk to lose, in some instances, all their hair.

The animal's general condition is also greatly affected, and they get poor and weak and usually die.

This is one great reason why we should ship away our overproduction of elk, but the principal reason is to prelieve, average one calf to the cow.

This year's experience proves that it it is not a difficult or expensive task to catch, haul, load and handle the elk; neither were there as many killed and crippled as a person would think there would be in handling wild animals. Considering the condition any range animal would be in after a long, hard, cold Montana winter and delays the railroad company made en route, I think the results very good and that

IN STOCKYARDS.

vent the animals from dying from starvation due to overcrowding the range.

There are thousands of acres of good range in the Rockies and Cascade mountains that are well adapted for elk, and, by turning ont 1,000 a year, in a few years this country will be completely stocked.

These animals are very hearty and prolific under favorable conditions. Many of the cows have two calves, and taking them straight through will, I believe, they will compare favorably with handling range cattle under the same conditions.

As this is the first experience scouts and game wardens had had catching and shipping elk, there were many things to be learned by actual experience only.

Different kinds of cars were tried. I think the open stock car with a two-foot strip of burlap or something of that nature, to prevent the elk from

seeing out, is the best. It should be divided in compartments with about two partitions in an ordinary stock car, making three large stalls holding about thirteen elk each. This would prevent so many getting down, and unlike a domestic animal, it is impossible to use a prod pole and get an elk to get up on his feet. He refuses to get up. The elk should be classified, the larger ones put in a compartment by themselves. The calves, which are weaned by this time, should be shipped together and not mixed with the larger ones. If large bulls are loaded, they should be dehorned.

The palace horse car is too tightly closed, not allowing enough ventilation. The elk are very thickly haired out at this season and when crowded into a car and more or less excited get very hot, as all are seen with their mouths open. The cars should be attached to passenger trains, as the freight trains are so slow and delays so numerous and long.

It is practicable to unload elk en route and to feed and water them in stockyards, as they do cattle. The railroad should be compelled to take the same care of these animals they do of cattle. The following is a list of the elk shipped, number killed, methods of loading and general results.

First car, shipped March 8th, palace stock car, 60 elk; calves, yearlings and two-year-olds; not classed; two compartments; shipped to Startup, Wash.; 94 hours on road; 11 killed on car; 7 died after unloading.

THEY LOOKED LIKE WILD CATTLE.

Second car, open stock car, no compartments, 43 elk, cows and calves; shipped to Hamilton, Mont.; 30 hours on road; 4 died on car; 1 died after unloading.

Third car, open stock car, 3 compartments, 40 elk, classed; shipped to Thompson Falls, Mont.; 24 hours

on road; 2 elk died on this car.

Fourth car, open stock car, 3 compartments, 36 elk, large cows; shipped to Stephensville, Mont.; 1 died on car; 1 died after unloading.

Fifth car, open stock, 3 compartments, 40 elk; shipped to Deer Lodge, Mont.; 24 hours on road; 2 elk died on car.

Sixth car, open stock car, 3 compartments, 40 elk, classed; shipped to Hamilton, Mont.; none died.

Seventh car, open stock, 3 compartments, cows, calves and one old bull, 46 elk; shipped to Mount Vernon, Wash.; unloaded and fed twice on road; seven died altogether; on road about 4 days. The elk arrived in good shape and were strong. This car was shipped about same distance as the car shipped to Startup.

Total number died and killed in shipment, 27 elk, or 8.8 per cent.

Number died after unloading, 9 elk. Altogether the total number died from the time the elk were loaded until they were turned out at their destination, 36 or 11.4 per cent.

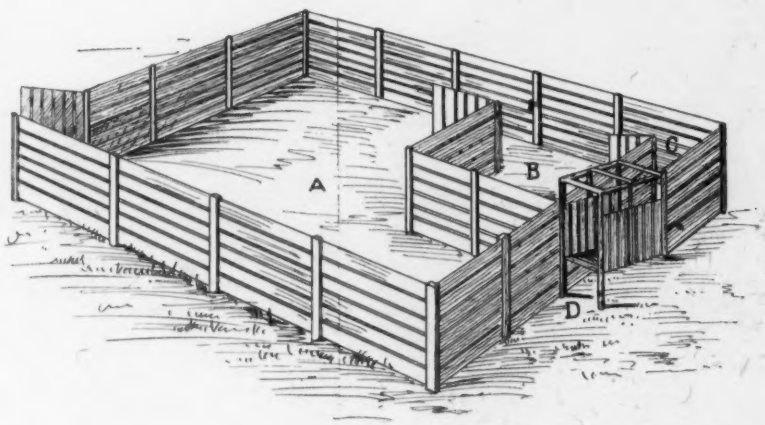


DIAGRAM OF CORRAL.

A—Large corral. B—Small corral. C—Chute. D—End of chute where wagon is loaded. E—Hay.

Next season the elk can be handled much better and at a considerable less loss as the experience gained the past spring with the seven cars caught and shipped will add much to what little was known before this experiment was made. I believe the percentage will be reduced to 4 per cent. or less.

THE "JANE," THE RANCHMAN AND THE "BACHELOR-MAID."

A HUMDINGER

AGNES BOSS THOMAS

I'm growing sprouts. Visiting on a Montana ranch is not only fun for me but a source of infinite amusement for the young bloods, or bucks, or ranchmen, as they are pleased to call themselves. They say, though, there's yet some hope for me; that if I stay here long enough they're liable to make a thoroughbred of me in spite of myself. But if I stayed here from millennium to millennium I'd never learn their vernacular. Of course they put it strong for my especial benefit. I'm onto that, all right; but then, I'm a "jane." And a jane's the *real thing*. So, being qualified, the boys corralled a dance in my honor.

The evening was divine—as it should have been. The ranchman who was sweet on me, my hostess' brother, regaled himself in a "b'iled front," a real collar and a red tie; (the rest of his clothing didn't matter), "hooked" his cayuses, tucked his fiddle under the seat of the family carriage, and stood waiting. Now, being a creature feminine, I was wild to "dress"—just to give the boys a treat and show the women how 'tis done—but, alas! all my finery had been left in town! Indeed, I could only boast of a lace waist, "sorter middlin'" at that, and a couple of rhinestone horseshoes. But I made the best of what I had and joined my hostess, who, with her bachelor sister-in-law (the latter won't stand for the term "maiden"), joined Mr. Ranchman.

Now, it was the first time I had seen

THE ROAD TO THE RANCH.

him togged, and it wasn't an improvement. Talk about the Paxton "glow" or the Charlie Russell "action"—it was all there! But somehow that linen front spoiled the color effect of his tanned skin, for the soft, open shirt was mighty fetching to the likes of me. Then his sombrero set perfectly straight (the idea of a sombrero setting perfectly straight!) in honor of the red tie, wasn't a bit nifty; nor his town-ordered patent leathers, a bit too tight. Just the same, I took the proffered seat beside him, the two ladies getting in behind. Mr. Ranchman—let's call him Bill—was joyful; so was I; so were they, behind.

"Well, City Lady, we'll show you some; we'll put you through to-night, all right, and prove the old saying that the other fellow don't know what his pal's a-doin'." Then, looking at me: "Why, girl, don't look so white; there's no use straining yourself. Suppose you finger the ribbons while I get my tobak."

Rolling and lighting a cigarette and resuming the driving he continued: "You've got to brace up; we're fording the river to-night, and she's some swollen, by gosh! Wonder if the horses'd bog! Well, I haven't a care, for then you'd ride me and the rest of us could hoof it to the show."

I was frightened.

He turned to his horses. "Light up, light up there! Say, Roxey, 'fore you know't you'll fall and stick your heel in your eye. Whoopie! There's the river! Ain't she a beaut? Swollen a half again, or I'm a hunnyoke!"

"Bill, you're not going to cross that river!" came from behind.

"Madam, I'm pained to contradict you, but I'm going to do that very thing."

"But it isn't safe!" implored his sister.

"I think this is simply preposterous!" burst like a bomb from the bachelor-maid.

"Say, City Lady, are you scared, too?"

"Oh, no," I answered, gritting my teeth.

"That's right," and Mr. Ranchman took out his whip and crossed his legs over the dashboard. "Now, ladies, I regret to say you must hold up your feet. Don't mind me, oh! don't mind me"—looking maliciously at the bachelor sister-in-law—"for we might bog. Leastways ,the river's high!"

"Oh, Bill!" screamed his sister.

"Oh, oh, *oh!*" gasped the disgusted and horrified maiden.

But I hadn't wind enough to even gasp.

"Now look out!" called the driver, using his whip. "Steady, Roxey; steady, Fred. There, there, go to't!" A cut of the whip, two-three-four. Uh! The water reached the hubs, the current was tremendous, drifting the carriage down, down the stream.

"Up, Roxey, up Fred, steady there, steady!" The water crept into the carriage, rising higher, higher, five inches, four inches, two inches within the seats! I closed my eyes. Then a silence of sucking water—a bump—a lurch—a pause—a swearword, followed by the lashing of a long, smarting whip while the ranchman buoyed his horses:

"Steady, steady, just a little longer. Roxey! Fred! Now bolt by jerks like a frog on a lope." Another lurch, a short, strenuous pull, and the cayuses made the opposite bank.

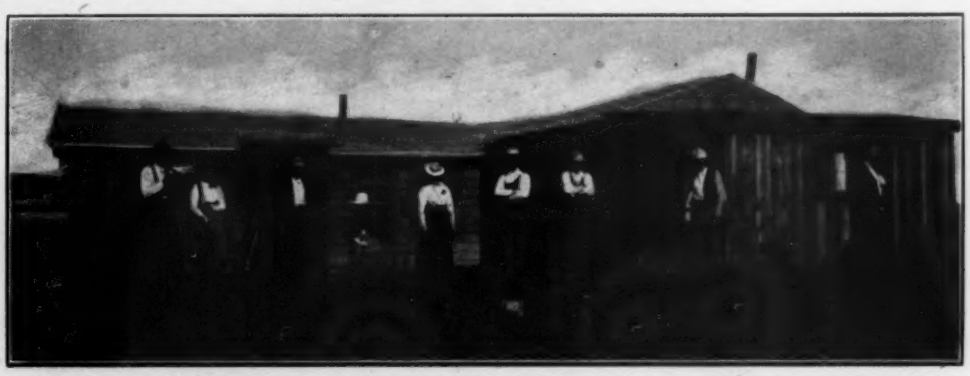
"Gosh, that's goin' some!" acknowledged our driver. "Say, girl, wasn't that bully?"

"Ye-s, that was bul-ly," I panted, somewhat palely.

Then we all took a long breath and settled back in our seats.

When we arrived at our destination it was nearly 9 o'clock and as dark as pitch. The bachelor host, who had loaned his cabin for the "round-up," came out to "give the women a lift" and get the cake and sandwiches we were to bring, which long since had fed the fishes in Powder River! Now Bill had told me that our host, whom the boys called "Chunkey," was a "short, sawed-off razee who didn't have any head—just a piece of neck haired out." Imagine, then, my surprise when "Chunkey" materialized into a long, lean, lanky, mean-looking but fascinating eligible, with a yard or two of neck! I simply gaped; how could I help it? Even in the dark I discerned Bill shaking with laughter and heard his chuckle of amusement!

Entering the cabin we found the "party" all there waiting. And I'll bet my rhinestone horseshoes had my past, present and future cooked to a finish and seasoned with tabasco. Anyway, that was the feel in the ether. There was the inevitable school "marm," who shot defiance at me for infringing on her preserves, and I noticed later, mimicked me at my back. (I concluded she filled the bill of a Montana wild cat, meaning a hifalutin female.) Then Mrs. Some-body-or-other, who "brought the children"—not!—girls anywhere



THE BACHELOR'S FOUR-ROOM SHACK WHERE THE DANCE WAS HELD.

MY LITTLE HOSTESS.

Who lived within fifteen miles of the Bad Lands and fifty-five miles from a railroad.

from 18 up, and who had their steadies. Anyhow, a legitimate excuse for mamma who was "so young for her age and just dyin' to dance!" And there was Straight Buck, the woman who was married in the middle of Powder River to Catamount Jack.

Among the gents were "Give-a-damn Jones," "Liver-eating Johnson," "Whiskey Dick," "Tobacco Jake" and "Smiling William," who's so "dead on his feet he don't even know that Teddy's returned."

After being introduced I followed my companions to an adjoining room to remove my wraps. Evidently this room was a bed chamber, but I'm not sure, for it wasn't lighted. And somehow I felt that it wouldn't stand the light, for our host lived all by himself in this little four-room shack. Besides the dark chamber was the small entrance room where the party "all set 'round," and beyond this a larger room which had been cleared for dancing. On the wall hung a chromo of the "Resurrection" and opposite, within a foot of the low ceiling, sputtered a small kerosene lamp, under which sat the fiddlers on a board supported by a couple of logs. The last room to the back was the kitchen where the fellows congregated, taking turns with the tin dipper in a bucket of water set suspiciously near the contributions for refreshments on the table.

After the women had eyed me sufficiently and found I wasn't so long on clothes, they decided to be friendly, and were mighty nice, too.

The bucks—oh, but wait!

The ball opened with Bill waltzing me "around, around, around," fiddler number two making the music. Then I two-stepped with "Chappie," newly arrived, who was greeted with: "Gee, when'd you break out?" (Referring to his chaps.) "Where'd you get them whiskers?" Next, our host, the long, lean Chunkey. Say, perhaps these ranchmen can't dance! Why, they've got Harry Lehr beaten a mile, even if he is from New York! Then the quadrille. Bill asked me if I knew how to dance it. Of course I did. Seeing my partner was Whiskey Dick, the boys clamored: "Howl for us, Bill; howl for us!" With the air of a cazique Bill stationed himself in the doorway, but waxing impatient at the fiddler's "tun-in,'" shouted: "Wake up, snakes, and shake your rattles!"

"Aw, how can we," retorted Tobacco Jake, "there's a jane missin'!"

"That's easy," shot back at him, "put an apron on a buck and work him in the square."

The next minute Chunkey came forward, a kitchen towel girding his wasp-entine waist.

"Ready!" announced the boss. "Janes, scatter together!"

Then my troubles began. I thought I knew the quadrille. O treacherous illusion! For after regaining my bearings I heard, in a sort of hazy way, something that sounded like this:

"Swing with your opposite all alone,
Then with the one you call your own;
Half right and left with the couple you meet
(Oh, my goodness, ain't they sweet!)
Up to the next and don't get slow,
Join your hands and around you go,
Swing with your opposite all alone,
Now watch your squaw that she don't roam."

Confused and warm, and while yet wiping my face, my partner grabbed me around the waist, the fiddler began fiddling and the howler howling:

"Janes to the right and bucks to the left,
Three by three and polk-e-o;
* * * * * * *
Alaman left, grand right and left
Meet your partner with the elbow hook
And the log chain crook
And keep a hookin' on, hookin' on.
* * * * * * *
Alaman left, grand right and left,
Corral your partner with a Powder River bow,
Keep on goin' for you're all right now."

And as a grand finale:

"Lock horns with the heifers and all stampede!"
(Promenade.)

Then:

"Now prance right back in Injin style."

Refreshments followed. Bill rushed me to the kitchen, where we "all set 'round on th' flur." We had sandwiches, pickles, more sandwiches, cake and coffee, with one tin cup to a couple!

The guests next to me were minus a spoon. So Chunkey, wiping his, threw it over. I had scarcely finished my cake when Bill offered to divide his with me. I declined.

"Why," he asked, "are you full?"

"Yes," I replied.

"Well, full to the nozzle?"

After refreshments the party began to lag. I wondered why someone didn't move to go home. I waited and waited, and yawned and yawned. I observed that others did likewise. Then I thought possibly they were waiting my pleasure in the matter. So turning to Bill I ventured:

"Don't you think it's time we were going?"

"Why, girl," he laughed, "it's too

MY HOSTESS' LOG HOUSE ON THE POWDER RIVER.

dark to risk drivin'; we've got to wait 'til it gets light."

"Wait until it gets light!" I gasped, "and how soon will that be?"

"Well, it's two now. Oh, I guess by five."

Landsakes! Certain sure we must all "live and learn."

Shortly after this the boys took their sougans and went outdoors to lie down. The women, left alone, lounged on the straight-backed chairs and tried to sleep. Evidently the boys weren't doing much better, for every now and then they sang snatches of "Her Heart Was as Big as a Ham," or just as we were nearing the borderland the silence would shiver with: "Wow-wow-wow!" But there's always an end—sometime, and in this instance, as in all others, it came with the dawn. We refilled the coffee pot, "biled her up and drank her down" and washed the dishes. Thus ended the ball. Then followed a harnessing of cayuses, a scrambling into buggies and carriages, a mounting of horses and a scurrying home.

Upon the return drive Bill confessed his "error" by going twelve miles down stream instead of fording the river a second time. As for me, if I should ever come to the pass of wishing to commit murder, I know now it would be towards those who get up to see the sunrise. Also, maiden ladies who rave over color effects, silences, twin souls and such. Like Bryan they are afflicted with "damphoolia," but don't know it.

After we had listened to a rhapsody of "silver sage bushes" and "first soft blushes of the morn" cooed by the bachelor maid, Bill burst open. "Look! Look at the glow on yon weed! How the nail heads glisten in the fences! Ah, e'en the cows, chewing their cuds, are a symphony of motion!"

When we at last creeked into the barn-yard it was half past seven and breakfast was ready. "Gosh," ejaculated Bill, "I'll bet my cistern would reject even a Happy New Year just now!" True, we were too exhausted to eat. And dragging myself to my room I undressed to the ever-recurring strain:

"Lady round the lady, and the gents so-lo;
Lady round the gent, and the gent don't go."

Then I slept.

MT. CONSTANCE.

AMONG THE OLYMPIC MOUNTAINS

TOM LAWSON

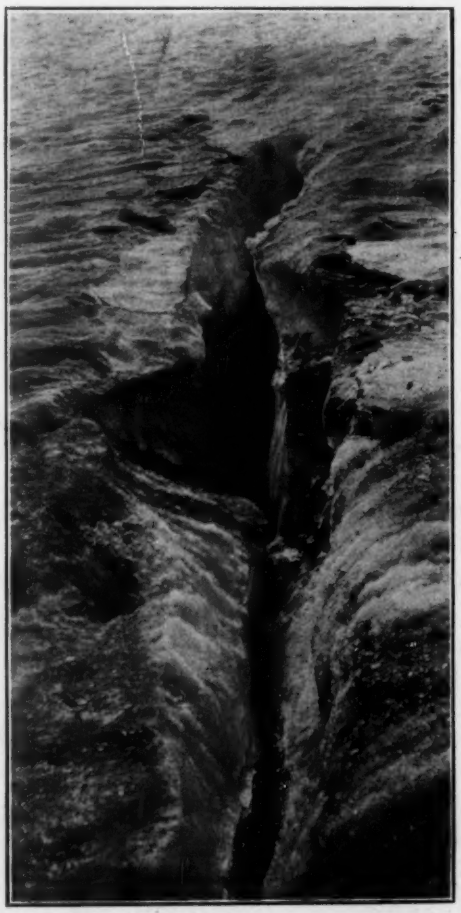
Many days preparatory to the opening of the season and the big-game hunt our trusty steels were surveyed with an eager eye and caressed with a fond hand. On September 3rd our party, consisting of C. W. Taylor, guide; Bud Armstrong, George W. Moore, Otto H. Volrath, H. Parks, Dr. Wilson, Earb Paddock, Art Richmond and myself, left on the "Lady Alice" from Seattle, Wash., for Quilcene, Wash., fifty-three miles up on Hood's Canal. All went well until nearly 7 o'clock in the evening, when our engine began to snort spasmodically and we pulled in at Bangor on the dying efforts of our engine, which was hotter than blazes. Leaving it to cool, we walked to the store for something to eat. While endeavoring to arouse the keeper we awoke his four-footed guardian, which came upon us with malicious intent, but received a boot at the crucial moment. Securing our provisions we went aboard. The engine was tried again, but refused to accommodate us. Someone suggested cranking it a little, then to give her a drink, then again to test the batteries. Cranking seemed to be the most advocated, so all took a turn until we were all exhausted. A rest was declared and while doing so all took a trip to the Land of Nod. Awaking at 5 a. m. we found that the engine had cooled and the batteries stored more energy. A little more cranking was done and sufficient sparks started us on our journey once more, we arriving at Quilcene seven hours late. We were met by James Graham, a guide with four pack horses. With skilled hands and lots of mantricity he soon had our outfit packed, and we were off on the trail

THE AUTHOR.

for a thirty-five-mile hike to the headwaters of the Dungeness River, in the vicinity of Mt. Constance.

Leaving Quilcene at noon, we arrived at a cabin known as "Seven Mile Camp." Here we halted for lunch and a little rest of half an hour. Our intentions were to make the "Seventeen Mile Camp" of the Cooper River Mining Co. that evening, so we hit the trail again, crossing the Small, then the Big Quilcene River, arriving at 9 o'clock somewhat tired. A few minutes elapsed ere we were rolled in our blankets sleeping the sleep of the weary.

The next morning Guide Taylor had the camp astir at daybreak, and, breakfast was soon over and the horses ready. As the sun rose majestically from behind a neighboring snow-capped peak, shedding its soft rays over the surrounding country, we started up the serpentine mountain trail which led up to Eagle Pass. Reaching this, we obtained a most magnificent view of the Straits of Juan de Fuca, the passage to the Pacific Ocean. Passing on and higher up we reached a point which afforded us a superb view of the rugged, snow-clad peaks of the Olympic Range, the vastness and the beauty of which fills one with a longing desire to answer the call of the wild. The end of the journey



CREVASSE ON BIG GLACIER.

had not come, so we hiked along, coming to a ridge which had been given the name of "Dirty Face" by a party camping on its summit. As water could only be obtained in the valley below, it was carried for cooking purposes only, and the fellows went with dirty faces, hence its name. Crossing this we came to Gold Creek, where we lingered long enough to refresh ourselves with its delicious cold water; then passing on to Iron Mountain, five miles the other side of which was Buck Horn Mountain, and four miles farther on was a beautiful little valley nestled in the heart of the big mountain on the banks of the Dungeness River, where we were to make camp. We arrived here about 5 o'clock in the evening. After making the necessary preparations for sleeping, we sat around and enjoyed a big camp fire, telling stories of our varied experiences in big-game hunts until nearly 10 o'clock, when we turned in. The moon was just shedding its silvery beams over the little valley.

Early the next morning, accompanied by James Graham, a guide, I climbed a draw which led straight from camp to the rim rocks above. We had not been gone more than two hours, still in sight of camp, when Graham's experienced and well-trained eye located two deer crossing a slide some 500 yards ahead. We continued climbing in their direction and when about half way, Graham sighted six more, which we watched climb to the rim rocks and slowly leave us. Graham suggested we go into the timber and endeavor to get above them. As we entered the woods we came upon the tracks of the first deer seen. We thought it advisable to trail them, and had done so only for a few minutes when we came upon them fifty yards ahead, but were disappointed on finding them to be does.

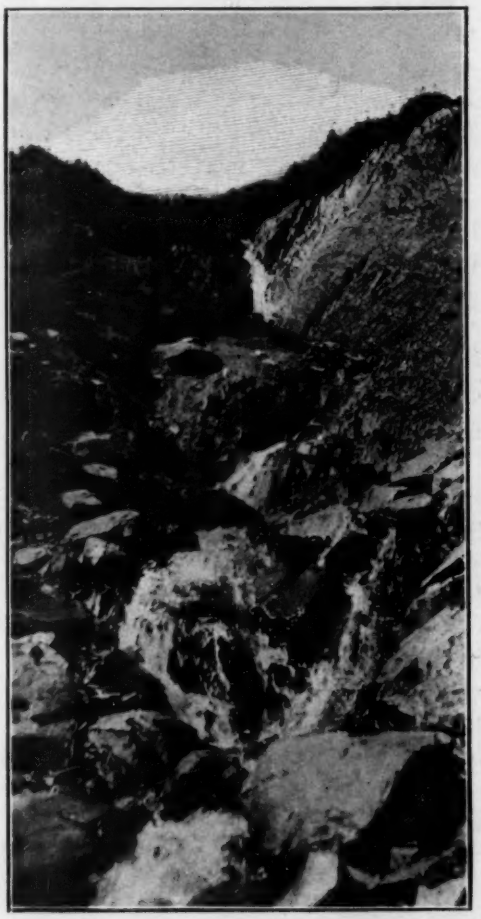
Just outside the timber I glanced along the rim rocks above to the right and saw two fine bucks outlined against the clear sky like statues, gazing at us. Deer are not regularly hunted in this part of the country, and when they see you at a distance they actually watch you climb towards them. This happened on four occasions during our trip, and in each case the deer were killed within 175 yards, and all standing still after watching us creep from rock to rock on them. The first two of which I speak were from 300 to 350 yards away and

THE AUTHOR AND HIS BUCK.

were watching us when we located them. We crept closer, dropping behind a little hill, appearing again within 175 yards of them in plain view. We stood up, Jim taking the first shot at the four-prong buck, missing. I took the next one, my bullet splashing the rocks under his feet. I fired again, this time hitting him in the head. He tumbled headlong to the rocks below and took the count. Not until he had fallen did the other, a two-pointer, disappear, only to reappear fifty feet away, standing on the ridge. At the first shot he went down, pierced through the intestines with Jim's .303. The deer jumped to his feet. I then sent one at him from my .30-30 carbine, which found its way through his ribs. He disappeared down the shale slide. When we reached the spot we saw him walking 100 feet below. This time Jim sent a ball through his neck and he went down for keeps. They weighed, dressed, 125 and 110 pounds, respectively. Jim having the knack of the stunt, dressed and spliced their legs together, making a shoulder pack. As our ascent was a steep one, going down with a deer on our backs was not an easy job; however, after a few tumbles, we reached camp about 4:30, having seen by actual count fourteen deer. Joy prevailed in camp, for the future prospects were good.

Graham having to pack out a party from Buck Horn Mountain, left early the next morning with his pack horses. I stayed in camp all day, as packing a deer for two miles does not tend towards strengthening a fellow. I also guarded some ten or more wasps which had been imprisoned in a hole by Volrath. Guide Taylor, with Armstrong, Moore and Volrath, hunted the neighboring meadows, returning to the camp in the evening without success.

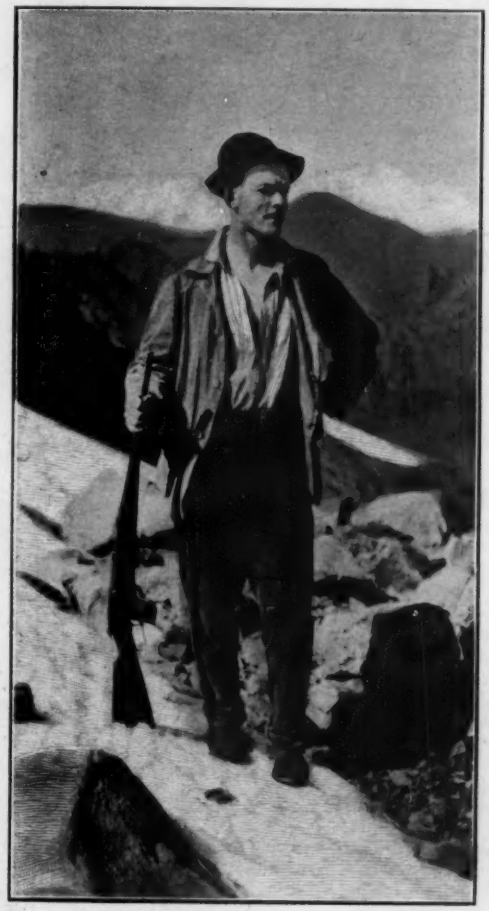
The next day it rained and all stayed in camp but Volrath, who left, saying that he intended making it as hot for the deer as the hornets had made it for him at camp. As it was raining hard, he returned without the game, but said that he had located numerous tracks.



NOSWAL FALLS.

The next day it rained and camp looked good to all of us, but the following day broke with a clear sky. All having had a good rest, we left camp at daylight. Guide Taylor with Volrath went up the river, while Armstrong, Moore and I took to the ridges. Until noon we were unsuccessful in locating

any game. Reaching the crest of the hill overlooking a deep valley we sat down to eat lunch and watched the meadow below. Hardly had we begun when Moore sighted a brown speck moving slowly up the opposite side. By the aid of the glasses we saw that it



GUIDE TAYLOR.

was a splendid five-pointer. We finished our lunch and started in pursuit. Down in the valley we separated, Armstrong following the tracks, Moore going to the rock slide to the left, while I watched in the meadow. Armstrong on the most direct route was soon upon the buck lying in a little hollow. When within seventy yards he jumped, and Armstrong sent a message after him. He evidently did not quite understand it, for he took three jumps and stood still, but only for a short time, for a second .303 bullet went dangling through his heart region and he was done for. He weighed about 180 pounds dressed. We quartered him, as this was the only way we could pack him to camp. Taylor and Volrath were in camp when we arrived. They had several good chances at deer, but were unlucky. Nine deer were seen this day. Volrath was nursing his head when we arrived, having been besieged by wasps with rattling success.

The next day was a beautiful one. Moore and Volrath went into a new valley and were rewarded with a fine buck apiece, weighing about 185 pounds each. Taylor and I went out to shoot with the kodak and enjoy the beautiful scenery. As we reached a ridge overlooking the valley in which the boys were hunting, we heard signal shots which clearly said, "You have had enough pleasure; come down and help us," and we answered them and climbed down to see what success they had had. Two big bucks were lying where they were killed, within 100 yards of each other. We had just time enough to dress and pack them in the snow and make camp by dark.

The following day it rained, but we all left camp to pack in the deer. I took the only gun on this trip, for I wanted a big buck with fine horns. We were gone but a short time when one of the boys saw my deer not more than seventy-five yards ahead. We were laughing and making all kinds of noise when Moore motioned us to be quiet and indicated the spread of a big buck's

horns. I crept alongside of him, and he pointed out the big fellow. I may have been a coward, for while his back was turned I raised by .30-30 and planted one in his back which tore along the backbone, breaking it. He tumbled down a rock slide. When I reached him he was not quite dead, so I finished him with my Colt's.

We were busy for the next day packing meat into camp. The following two days we fished and rested, and regretted the day when Graham would come with his pack horses to take us back to the busy city of Seattle. The trip was one of continuous enjoyment. The deer are there among the superb scenery. It is also the winter quarters for two large bands of elk.

Our guides, C. W. Taylor, James Graham and Roy Strom, are men of the mountains and are of the most congenial sort, tireless in their efforts to please and make their party comfortable. Hunters who desire to hunt in this section of the Olympic Range will be fortunate in securing the services of any of these guides. Strom and Graham with their pack train of ten horses have their headquarters at Quilcene, Wash.; C. W. Taylor, care A. L. Hall Sporting Goods Co., Seattle, Wash.

The "Hike"

Hardtack, bacon, aged beans,
Chicken, pigs, and empty dreams.
Hardest hikes in hottest sun,
Ambushed fights, too tired to run.
Dark-faced men with looks of thunder,
Too reckless now to stand from under,
Blood shot eyes, and yells, and hoots,
Ragged shirts and soleless boots,
Was it then for gold they fought?
Does such hardship count for naught?
Weed-grown mound on lonely hill,
No more hikes, nor beans, nor drill.
The red suns rise, the red suns set
On a red brown hill we can't forget.
On a lonesome beach where the palm trees wave,
A spirit seeks what the body'd crave.
The Southern Cross and the Milky Way,
Cast deep, black shadows where the vampires play,
And memory rolls o'er the white-capped sea
Like the last sad hike of mystery.

—MILTON LEACH.

STILL-HUNTING MOUNTAIN LIONS

TEXT AND PHOTOS BY

W. C. DALLAS

THE BIG GRIZZLY.

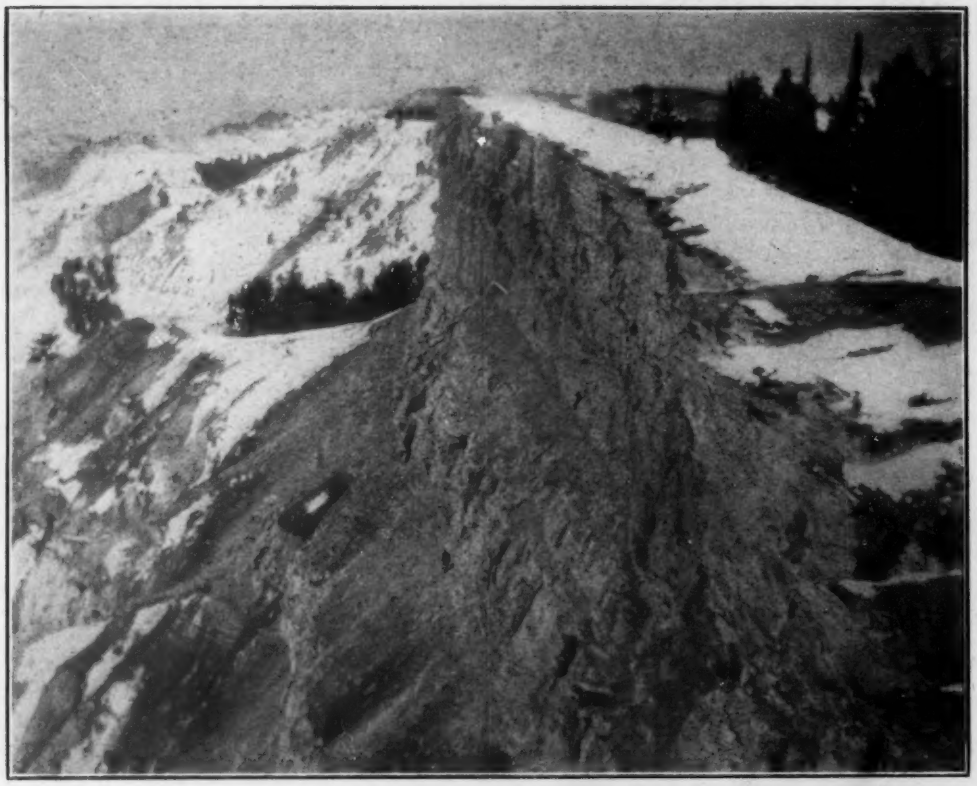
Killed on Gros Ventre by Wm. Bierer and the author. Hide sold for $100 raw. Length, 8 feet 4 inches; width, 6 feet 6 inches; weight, 750 pounds.

Jim Williams, my partner, and I were camped at the Crystal Creek cabins (Wyoming) in January, 1912, for the winter, trapping coyotes, lynx and marten, with wolf-hunting as a side issue. We had brought our grub and outfit up from Jackson in the latter part of December and got out our wood, fixed up the cabin, and after a trip down with the team, we snow-shoed thirty miles back to the ranch and started to string out our traps. We had thirty traps of sufficient size for coyote, lynx and wolf, a few fox traps, Size 2, and a string of jump traps Nos. 1 and 2 for marten.

We put in the first week setting coyote and wolf traps, after which we scoured the hills for a few days looking for wolves, but without success, as they, for a time, it seemed, had all gone down below around the settlement. So, rolling out one cold morning, with the logs of the house snapping with the frost, we cooked a meal of elk steak and "sour-dough" pancakes and during our post-breakfast smoke our talk drifted to the subject of mountain lions. "I'll bet you my plug hat, Jim," said I, "that we can scare up a lion or two in the Slate Creek cliffs." "We might find some," he replied, as he refilled his pipe; "let's try 'em a whirl." "All right, and we'd better be making tracks, too," said I. So, after stowing away some lunch in our pack-sacks, we buckled on our snow-shoes, took our rifles and started.

The day was one of those still, sunny ones of the cold, sparkling variety which in Jackson Hole are rather scarce in winter time. As we swung down across the smooth expanse of meadow below the house, with our webs creaking in the cold and our breaths leaving clouds of steam as of miniature engines, it seemed, as I remarked to Jim, "good to be alive." The day was perfect and we felt as if we could go several hundred miles without a stop.

"I've got a hunch, Jim," I said, "that



GOOD LION COUNTRY. NOTICE FIGURE OF MAN AT FOOT OF CLIFF NEAR CENTER OF PICTURE.

we're going to have some tales to talk about when we get back tonight." "I hope so," replied Jim, who is not much given to any very great flights of fancy.

As we rounded a bend of the creek we "jumped" a bunch of about a hundred elk out of the willows, who ran up the hill a few hundred yards, stopped and stared at us, one old cow "barking" at us as if angry for disturbing them at their morning meal.

The shoeing was perfect that morning and we swung across the big flat toward Grovont at a fast clip. Crossing the ice at the old ford we climbed the low hills on the north side of the river and soon stood on the low divide between Grovont and Slate Creek, where we stopped to adjust our shoes and get some more "steam." As I bent over, tugging at a refractory knot, Jim asked: "What's that standing up there?" Looking up, I took the glasses and made it out to be an old sheep standing outlined against the sky at the topmost point of a high cliff, probably two and one-half miles away, and looking down at us. As I watched, 'round the point came four others, one of them a small ram, 3 or 4 years old. They watched us a few minutes, then bounded away over the rocks.

We then continued on our way across to where a long ridge ran up to the top of the main "rim," where we expected to find lions, if there were any in the country. After striking the foot of the ridge we removed our snowshoes, the snow having been blown off, leaving the ground bare, slung them on our backs

STILL VERY MUCH ALIVE. THE LINE RESEMBLING A ROPE OR STRING IS A DEFECT IN THE FILM.

and started climbing. Resting at intervals, for it was a long climb and steep, we finally came to where a spur ridge joined into the main cliffs. Here we stopped, ate our lunch, filled our pipes and looked out over the country. Across the Grovont, far below, we could see bunches of elk scattered here and there over the country, pawing out a precarious living. At our backs rose the straight walls of a long cliff some 200 feet high.

"This sure looks like a good lion country, Jim," said I, as I re-adjusted my pack. "You're right; let's go," said he, and we started climbing again. We soon neared the top, and as I stepped out of a narrow "notch" between the rocks I exclaimed, "Here's what we're looking for," for there at my feet was the print of a large lion, made probably two days before. "That's him," said Jim, and slid a cartridge into his rifle.

Taking the trail I soon found his direction and said to Jim: "Which do you want; above or below?" for we had a sort of system for lions which I had learned from an old hunter on the Grovont. "Makes no difference," said Jim, and he climbed down through the rocks, while I waiting until he stood in a small game trail at the foot of the cliff, started on the trail of the big lion, which led straight up the rim. Jim meanwhile was making his way along the foot of the cliffs.

The trail topped the raise beyond a small "saddle," and I saw where the lion had stretched out on the sunny side of a large boulder and taken a nap.

Going a few feet further, I came onto the fresh tracks of two lions following up the rim. Following the trail, I noticed at times blood in the footprints of the big one. After trailing about 300 yards the tracks turned and went down through the rocks under the cliff. Motioning to Jim to come up close underneath, I stepped out to a small point and stood looking down toward the lower edge of the cliff. As I stood watching I heard the report of Jim's rifle, and whirling around I caught full view of a large lion as he sprang out of the rocks some thirty yards away, and throwing up my rifle, a .25-35 Winchester, I fired just as he cleared the ridge toward the timber—a snapshot at his flank. Running hastily to the top I was gratified to find him down, clawing and biting. As I drew on his neck he gave an enormous bound and, clearing the edge of the cliff, fell tumbling and clawing to the foot, almost on top of Jim, who was looking for his lion among the rocks. The lion continued down the side of the hill, which was very steep at this point, and as he was making pretty fair time, although unable to use his hind legs, I fired again at about 200 yards, striking him in the back, when he rolled down the hill into a steep gulch, finally bringing up under a large sagebrush.

THE AUTHOR AND THE TWO LIONS.

JIM AND THE LIONS.

Knowing that he was about "all in," I helped Jim search for his lion, which we found in the course of a few minutes at the foot of a large rock. It was a female, probably about 3 years old, with a beautiful skin. Dragging her, we went down to where the big lion had stopped. He was unable to go far, but still was very much alive, snarling wickedly as I adjusted my camera and snapped him as he growled at me. Then a well-planted shot under the chin finished him and his record of deer-killing.

On examining him, we found that my first shot had struck him in the right flank and ranging forward had entered the backbone near the shoulders, paralyzing his hind parts. The second bullet had struck him fair in the back and gone into the lungs. Jim had shot his through the heart as it was slinking around a rock about fifty yards away, killing it almost instantly, after which it had rolled down behind the rock.

After skinning them out, leaving the feet and head intact, we packed them up and struck the trail for home, well satisfied with our day's hunt.

After arriving at the cabin, eating supper and having a smoke, we stretched them out and made the necessary measurements. We found the smaller one—the female—stretched 7 feet 7 inches, while the male, an old-timer, measured exactly 9½ feet. Another thing we noticed was that he had lately been having a fierce battle, as his head and forearms were badly bitten, the holes left by the teeth of his adversary being almost entirely fresh, not yet having started to heal, and one foreclaw was completely gone. Judging from the fact that he had been fighting leads us to believe that there must be another large one around, but we will reserve him for another hunt.

Dog Days

As July wanes the Dog Day reigns once more
  And Sol of summer wakens warm and red;
Earth's seedtime season now is wholly o'er
  And midnight's Vega sparkles overhead;
Bird, breeze and brook are chanting soft and low,
  And thunder's voice alone speaks clear and loud,
The sunset lingers in an afterglow,
  Whilst over nature lies a sultry shroud.

—CHARLES NEVERS HOLMES.

The Real Prince of the Summer

Freckle-faced, tan-legged, stub-toed small boy! It is you who have the edge over the rest of humanity when summer has reached its sultry zenith. Your paths wander where the shade lies thick, beneath the whispering woodland leaves, where cool springs quench the thirst, and on down to the enchanted haunts of the old swimming hole.

Nature has favored you most when the streets are hot, when the office is a bore, and when civilized life is well-nigh unbearable, due to the torrid weather. All unconsciously, your bare feet seek the wild and your soul seeks the primitive. One exquisite splash down there in the warm creek means more than any cut-and-dried resort can ever offer in a season. Without realizing your good fortune, with no thought of any outside world, the long afternoon is yours.

If you are a real, genuine, normal small boy, you can pity the biggest capitalist that ever figured over the eating up of another railroad. That checkered shirt, open at the neck, is far more becoming than any stiff collar that ever chafed a throat. The whistle that comes through the place where the tooth is gone is in harmony with the birds that flit beside you, and is sweeter than a prima donna's song.

Just for you, the clouds drift dreamily through the blue. For your sake, the shadows mist the distance and deepen in the tangled glen. The very paths love the pressure of your bare feet. A thousand little touches are for you that others cannot appreciate.

You, dragging home at twilight with your hair still wet and another coat of sunburn on your happy face—you are the Prince of the summer.

ONEY FRED SWEET.

THE AUTHOR CATCHING A TROUT IN WHITE RIVER.

AN AUTO FISHING TRIP

E. W. JORDAN

Probably one of the wildest and speediest rides ever taken in an automobile in the Rocky Mountains was made by a party of five who left Palisade, Colo., in a four-cylinder Franklin car at 5 o'clock a. m., July 19, 1911. We reached our destination at the head of the White River, a distance of over 200 miles, at 6:30 p. m. the same day, an hour ahead of the time anticipated. It was a great ride—one never to be forgotten by those who participated in it. Those in the party were Dana Reed, C. S. Reed, F. Crumly, J. R. Bradshaw and the writer. The trip was made in the writer's machine, and the experiences at times were thrilling, our ride taking us down the mountain sides and on the edges of precipices where many dangers lurked. We followed up the Grand River to Plateau Creek, thence to De Beque and on to Grand Valley over a road that wound up a steep mountain like a snake. Down the other side the auto speeded, at times making sharp curves, where the wheels grazed the edges of an abyss by only a few inches; then into the open, where sagebrush and dust were about all that could be seen in any direction. The dust clung to the sides of the car and to the occupants, until all looked a mass of grey.

Nearing Rifle, we found the rocks thick and the curves of the road sharp, but time in our case was valuable, and the town was passed at noon, the auto breaking all records in the run to Meeker.

About twelve miles beyond the latter town an incident occurred which the occupants of the car will not soon forget: The rocks were thicker than usual and the curves sharper. Then suddenly we came upon a big rock, and at forty miles

an hour the machine was charged full upon it. The auto lurched to one side, slipped sideways in the sand, but cleared the turn in style, when the writer, glancing over his shoulder, saw the pebbles that had slipped from beneath the wheels falling over the 500-foot bluff just left behind. At 5:30 p. m. the car came to a stop twenty-five miles up the White River from Meeker, in front of a cabin known as Denton's Rest, one of the greatest trout streams in the Rocky Mountains.

afternoon, but they were all well rewarded, as Bradshaw had twenty-one, D. Reed twenty-three and Charles Reed twenty-seven—all fine ones.

After dinner we fished near the cabin, all being quite successful.

Next morning we arose early and fished hard all day, getting the usual three good trout meals from Mrs. Denton's table. Then we took our catch—a fine bunch of trout—and strung it up with bailing wire and hung it over night. In the morning we loaded our

A SCENE ON WHITE RIVER, COLO.

The following morning at 7 o'clock Messrs. C. S. Reed, D. Reed, Bradshaw and the writer with line and rod started to test our respective abilities as fishermen. It being my first trip on the White River, I was skeptical and hardly expected to get trout enough to eat, but one Mr. Charles Reed had guaranteed us all the trout the party could eat, so it was up to him to make good. Some went upstream and some down. When I came in at 11 o'clock I had just one small trout. The balance of the boys did not get in until 2 or 3 o'clock in the

fish in a box and started for Meeker. As it was July we were making a mad rush for Meeker—and ice. We landed in Meeker at 9:45, where we got fifty pounds of ice and put under and around our fish, and started for Palisade, which we made after a good deal of trouble. But we brought with us the finest bunch of mountain trout that has ever been taken into Palisade, and the party had one of the finest fishing trips of their lives. We had been gone from home only four days and had covered 400 miles of interesting country in one of the grandest parts of Colorado.

IS THE EXTERMINATION OF ELK CONTEMPLATED

A. B. C.

At one time elk ranged over nearly the whole of the United States, certainly from coast to coast, and as far south as Arizona. Today, though there are a few in Colorado, Montana, Idaho and Washington, they are really making their last stand in the northwestern part of Wyoming in and about what is known as Jackson Hole. The efforts now put forth by the federal and state governments to preserve this remnant from destruction have directed attention to a problem that makes an appeal to every sportsman, and even to those who have but a slight interest in game or hunting. It is a problem that is not easy of solution and one that may defy every attempt to solve it.

There is little or no doubt but that the Wyoming herds are composed not merely of the animals whose habitat has always been in or near that region, but they also embrace accretions from Colorado and Montana, coming from localities where the pressure of advancing civilization became burdensome. The proof of this is to be found in several circumstances. For one thing, both from Colorado and Montana elk disappeared from their accustomed haunts too suddenly to give sound basis for the belief that they had all been killed off. For another thing, the number of the Jackson Hole elks showed for some years a tendency to increase under conditions very much the same as those under which they are now bidding fair to disappear. Again, both in Montana and Colorado, the elk have all at once reappeared in considerable numbers; there is but one place they could have come from, and that is Jackson Hole.

Now the Hole and its environs are not and never were a suitable winter range for elk or any other game animal, however ideal for summer. Astor's expedition in 1810 spent the months of September and October close to that region, where elk are now fairly plentiful in the autumn. Coming up the Wind River, they went down Hoback to the Snake, but their hunters were able to get but one elk and there was complaint of the scarcity of game. Close to the Snake they found buffalo, but no elk, and as this was the height of the rutting season, they would have been sure to see or hear elk if any had been in that country.

Winter in Northwestern Wyoming is long and almost arctic in severity. Hills and valleys are covered with deep snow, which comes early and lies late. The temperature hovers around or below zero for months, except during the frequent snowstorms. In the upper part of the Hole snow often reaches a depth of four to six feet on the level. On the Teton Pass, the only route open for ingress or egress in winter, the maximum depth is seldom less than fifteen feet. Temperatures of 35 to 40 degrees below zero are not uncommon; Fort Washakie, east of the Hole, has a weather bureau record of 56 degrees below.

Elk can paw their way to feed through quite a deep layer of snow, if it is light, but owing to some meteorological freak, almost every winter there is at least one heavy rain, which soaks the snow, and

as it is invariably followed by a hard freeze, the ground is thus covered with a coating of ice so solid and thick that a pickax could scarcely penetrate it. This is what kills the elk. They paw and paw, until their feet get so sore they can paw no longer, and then they lie down and die.

The Hole was probably never the natural winter range of elk because of this fact. In former times many or most of them drifted out onto the plains east and south of the Hole to that locality known as the Red Desert, where there was less snow and where the almost constant wind kept much of the ground clear. These autumnal migrations were often seen by the early settlers, and the tales they tell as to the numbers contained almost surpass belief. There were droves numbering many thousands.

But this plains country is now given over to sheep and there is nothing that can make a living where they have been. The Big Horn and Wind River valleys are pretty well settled up and practically every elk that shows himself on the eastern slope of the Continental Divide in the fall is promptly killed or driven back into the Hole.

Thus it happens that there is no place but the Hole for the elk to spend the winter, and owing to the climatic conditions described, to spend it there is certain death to many of their number, especially the calves and weaker adults, during a severe season. No matter how mild the season, there is always considerable loss.

The mortality of recent years has often been appalling. Nobody knows how many have died. Some winters the calves lie in heaps about the ranchmen's haystacks. After an unusually severe season about ten years ago the carcasses of full-grown bulls and cows were equally plentiful. The extreme estimate, made by observers whose opinion should be given great weight, is that the total number has decreased from 100,000 to 10,000. The maximum is probably none too high; the minimum is probably too low. The forest service, at the instance of the Biological Survey, has been recently taking a census, the total of which is about 16,000, but these figures may be subject to some revision on account of duplication. With the exception of a few thousand head which drift from the Yellowstone Park into Montana and perhaps as many more that winter east of the park, this includes about all the elk there are in Wyoming. At the meeting held in Denver last winter of the supervisors of national forests in the Rockies, the Wyoming representatives put the total number in that state at 20,000, an estimate which errs, if at all, probably on the side of liberality.

There has never been and is not now any realization of the seriousness of the situation. The elk have been so numerous in times past, and they cover such a wide territory in their spring and autumn migrations, and even in their summer ranging, that many observers have been deceived. The 1910 report of the Yellowstone Park superintendent put the number of elk in the park alone at 30,000 to 40,000; there are certainly not that many elk in the whole United States; and the Biological Survey, no later than last year, relying upon hearsay evidence, estimated at 20,000 the elk alone that range in and about Jackson Hole.

The state of Wyoming has been exceedingly remiss in this matter, and it is not at all certain that the conditions

now existing are not more or less the result of design. The sheepmen would like much to see all wild game exterminated, and the sheepmen dominate Wyoming politics. Senator Warren, the undisputed "boss" of the state, is himself a sheepman. Had the known facts been accepted and proper provision made to meet the exigency, a great deal of the destruction of life would have been avoided. But even when the Legislature made an appropriation to buy hay, it was not always expended. The protests and representations of the Jackson Hole people were made in vain. They were accused of being actuated by mercenary motives, of being chiefly interested in the sale of their hay rather than in the sufferings of the elk. These reflections and insinuations were without foundation and were bitterly resented. But the elk starved just the same. The unpublished history of the handling of this elk question during the past few years affords food for mighty unpleasant thought. The time is probably close at hand when the most drastic measures will need to be taken to save this noble animal from utter destruction. It was the selfishness of the plains cattlemen which led to the extermination of the buffalo; the buffalo interfered with business. It is to be hoped that the same motives on the part of the sheepmen will not be able to accomplish a similar result in the case of the elk.

The Jackson Hole people have, on the whole, borne themselves well. It would be difficult to describe too strongly the annoyances to which they have been subjected. The elk have broken their fences and invaded their fields; they even came right into the village. The ranchmen have often had to guard their haystacks day and night, notwithstanding that all are protected by fences averaging ten feet high. The hay, when fed to the cattle, as is the custom, on the snow, has an irresistible attraction for the starving elk, of course, and it is often with many ranchmen an almost unceasing battle for months to save their hay and to get it inside their cattle. Not least has been the constant demand on one's sympathies. For weeks on end some ranches are never without the sight or sound of the miserable, starving creatures, night or day. It is one long-drawn agony, and to say that it gets on the nerves of the women and even on those of the men, is to put it mildly.

The Jackson Hole people have ample reason to complain, not only at the annoyance, but because many have suffered considerable loss of property. So far from seeking to sell their hay, there has never been a real surplus of hay in the Hole, over and above the actual needs of the settlers for their own cattle and horses, and many times there has been an actual shortage, that had to be eked out by feeding grain after the hay was exhausted, or by taking the cattle out of the Hole into Idaho.

The elk have been starved literally by thousands; there is no question about that, and their number is now so reduced that there is some danger of actual extermination. The facts have been concealed; whether wilfully or not it is impossible to say. As has been remarked, all the sheep men and many of the cattle men would like to see an end of the elk. The open season was lengthened to three months, and the bag limit increased to three head, after the most destructive winter in years, and in the fact of this knowledge, and the outspoken objection of the state game warden, it is absolutely impossible to ascribe such legislation

to anything but this desire of the sheepmen. If the elk were gone, nothing could keep the sheep out of a beautiful section of country now given over in summer to the elk and a few cattle. As long as the elk persist the Forest Bureau, which controls nearly all this region, is pretty sure to keep the sheep out; while elk do not like particularly well to remain in close proximity to cattle, they can make a living and subsist on a cattle range. No wild creature can make a living or will remain where sheep have been, and so destructive are they to all vegetation, and even to the soil itself, on sloping ground, that their presence in any forest reserve is absolutely inimical to every conceivable purpose supposed to underlie the creation of the reserves. But for the fact political considerations are often weightier at Washington than the public weal, not a sheep would be allowed on any National Forest in Germany where scientific forestry has been practiced on an enormous scale for more than a century, not even cattle are permitted upon the state's timbered lands.

Various propositions have been submitted looking to the preservation of this remnant in Wyoming. It has been suggested that they be rounded up by soldiers and cowboys and removed bodily to some region where conditions are less rigorous. This is wildly impracticable.

The Biological Survey, a bureau of the Agricultural Department, has been using, the past winter, an appropriation made by Congress, and part of one made by the State of Wyoming, to feed about 2,500 head in the Hole; towards spring this number was increased to about 4,000. But, owing to the fact that calves and adults were not separated, there has been quite a heavy loss among the former, which are always driven away by the larger and stronger animals, as is commonly seen among domestic cattle. And the ration doled out has been barely sufficient, at best, to keep life in the bodies of the strongest. There have also been sundry shipments to other localities, an expedient of doubtful efficacy, for there are none too many elk in the Hole as things now are, and there are likely to be less. In loading twenty-four head recently twelve calves were killed outright, and five cows had their legs broken so they had to be shot. The cost of delivering twenty head of calves at Sheridan, by way of St. Anthony, was upward of $1,300. Rather an expensive proceeding, both in cash and in life. There is little excuse for niggardliness in the actual feeding of the hay, in view of the size of the appropriations made, and of the quantity of hay available for purchase last fall—fully a thousand head of Jackson Hole cattle were wintered outside of the Hole, which left more hay in sight at the beginning of winter than had ever been known.

It has also been proposed that the limits of the present game preserve, south of Yellowstone Park, on which no hunting is permitted at any time, should be extended to take in the region between the Buffalo and Gros Ventre rivers, west of the Continental Divide. This is bitterly opposed by the settlers and rightfully; it it is a proposal that it is not easy to discuss with patience. To adopt it would be to sign the death warrant of the elk at one stroke. The proposed addition is covered with snow so deep every winter that elk in any number could not possibly subsist there. Nor could they be kept there under such conditions. Almost none naturally range there except in unusually mild winters. The few small,

scattered ranches on the Gros Ventre do not raise enough hay to winter all the cattle now owned there, and in case more were wanted for the elk, it could not be hauled in there from the Hole, except at a prohibitive expense. If that section were set aside as a reserve, and no hay were bought for use in the Hole proper, the elk would continue to drift into the Hole and would continue to starve as in the past.

It is impossible to ascribe motives with accuracy, but it is certainly the prevailing impression in the Hole that if this reserve were set aside for the elk, and no other provision made for them, they would speedily disappear and the sheepmen would then have achieved their desire, and would shortly be able to take possession of practically all the country between the Hole and the Continental Divide, north of the Hoback. As it is now, no sheep are given permits by the Forest Bureau, within this territory, and trespassers in times past have been promptly driven out. Jackson Hole is a cattle country, pure and simple, and the advent of sheep would spell stark ruin for every cattle man there, as is always the case.

The present state game warden, D. F. Hudson, has recommended that the area of the existing game preserve be extended east of the Continental Divide to the Wind River, so that the elk would not be driven back by hunters when they drift out ahead of the snow in the fall, and would thus secure a better place to winter. This plan is undoubtedly feasible, and it would tend to alleviate present conditions. But its adoption is not likely; any extension of the game preserve idea will be antagonized by the stockmen, in the locality affected.

On these National Forests, cattlemen annually pay 20 cents per head for adult stock and nothing for calves. An old cow or full grown steer will consume the equivalent of three tons of dry hay during the grazing season. The fee exacted by the Forest Bureau is nominal, but its collection is always bitterly resented. It is not to be expected, therefore, that stockmen would be anything but antagonistic to the presence of wild game on the range, albeit elk live almost entirely upon weeds that cattle will not touch, and their presence in large numbers would scarcely interfere with cattle.

Of course, the disposition of the matter rests with Congress, and it is a far cry from Wyoming to Washington, all the more when those who make the cry are actuated by selfish motives. But, whether the game preserve is extended or not, there is little likelihood that that expedient alone will solve the problem in its entirety. Every fall thousands of elk will undoubtedly go down into the Hole, and every winter it will be necessary for the State, or the Department of Agriculture to feed them.

The hay should be bought early in the fall, outright. Conditional acceptance of bids submitted by ranchmen, for the purchase of hay, is unfair. The ranchman must know what he has to count on; if hay is short and high in price, many cattle are driven across the Teton Divide for the winter feeding. The elk, of course, cannot be moved. In the fall also hay can usually be had at a reasonable figure. A large surplus should be carried over every year, to provide against unforeseen contingencies. Regular enclosures should be constructed into which the elk could be driven and kept, the calves separate from the adults. (The calves are practically all weaned by the beginning of winter but often con-

tinue to follow their respective mothers for months afterward.) There is plenty of land available for that purpose and the expense of the fencing would not be great, as there is plenty of timber close at hand.

Hitherto the elk have suffered from the diversity of the interests involved, and from the lack of an intelligent policy. Hit or miss methods will not avail from now on if the elk are to be saved. It is high time to take some account of what is demanded by the probable future of the game, and not to allow the policy of the state and federal government to be dictated by the stockmen and by the guides, whose interest are, as a rule, entirely selfish. As a matter of fact the situation with regard to deer and mountain sheep is far more precarious than is the case with the elk. Better results would also be apt to accrue if the Biological Survey kept in closer touch with the situation and relied less upon hearsay.

At first sight it would seem as if the handling of wild creatures almost like domestic cattle during so long a period each year, would speedily deprive them of their fear of man and make them so tame that it would be scarcely sportsmanlike to hunt them at all. Such, however, has not proven to be the case. In fact, if anything, their acquaintance with man has tended to make them shyer than ever. The elk, at best, is an exceedingly stupid animal, nothing like as wary as the blacktail, to say nothing of the whitetail or antelope. Time was when a hunter had to pay no attention whatever to a bunch that saw him afoot or horseback a half-mile away. But these elk have now learned what a man looks like and they will in summer sometimes move at sight of a horseman at an almost incredible distance away.

One of the most unfortunate results of the refusal or neglect to save the elk from starvation has been the changed attitude of the people living in the Hole. For years the game law was fairly well observed, few elk were killed out of season, and public sentiment was rather strongly against poaching; so much so that in 1906 four men who were known to be making a business of killing elk for their tusks and heads were "run out." But since the elk have been permitted to starve by wholesale, a somewhat different feeling has come to prevail. This is not universal, and outwardly the law is observed, but "on the quiet" not a few citizens are killing for meat out of season, and there has been quite a good deal of killing for teeth in winter, even within sight of Jackson.

This surreptitious slaughter has often been perpetrated by people who would be expected to be above that sort of thing, but the evil example set by a few has been contagious. It is outrageous that any man should kill an elk in summer. He usually kills a cow, and thus, seven times out of ten, leaves a calf to die a lingering death. And as a full-grown cow will dress 400 pounds or better, on the average, no one family can eat a quarter of the meat in summer before it spoils. Yet there are quite a few families, whose names could be given, who have fresh elk meat all summer long, and for that matter all the year through except when the elk are so poor in winter and early spring as to be absolutely uneatable. There are well-authenticated stories of even more wanton slaughter, as, for example: A year or two ago, when the bag limit was one head only, a well-known Jackson citizen went out in the hills to get a cow for meat. He

killed five before he got one that suited his taste as to fatness and condition; four were left to rot. Such happenings are not infrequent, and are matters of common knowledge but the people who know the facts are unwilling to cause them to appear as evidence against their neighbors for the purpose of enforcing the law.

With the taking of proper measures to prevent the loss by starvation, this sentiment will pass away, for the settlers want to see the elk saved, and are willing to make considerable sacrifices in order that this may be accomplished. The game wardens and forest officers are in concert and they have the hearty support of the better class of people. What is most to be feared is that through ignorance or design a plan may be adopted by those in authority which, so far from preserving the elk that remain, will lead to their speedy extermination. The present time is crucial, and a mistake, even if well-intentioned, may lead to a disaster that would be beyond repair.

The elk should be fed regularly in the Hole as suggested. The game season should be shortened and not more than one elk (and, incidentally, no deer or sheep) allowed to each licensee. The granting of licenses to women should be more strictly supervised, or abolished altogether. In ninety-nine cases out of a hundred the granting of a license to a woman is nothing but a subterfuge to enable her husband, or somebody else, to get double the number he is lawfully entitled to. Last fall, the writer personally saw an old Shoshone squaw and her two children, a boy and a girl, the eldest not over sixteen years old, take out six elk.

The buying and selling of elk teeth should be absolutely prohibited, and probably also the merchandising of any game trophy. The proposed game preserve between Gros Ventre and Buffalo should be abandoned once for all, although State Warden Hudson's suggestion to extend the boundaries of the present reserve east as far as Wind River is a good one and should be enacted into law. The number of game wardens should be increased, they should be chosen without regard to political affiliations or service; they should not be allowed to engage in any other business while holding the job, and should be required to spend practically all their time in the hills during the summer and fall, and, in particular, there should be a warden stationed on the new road over the Teton divide from Jackson hole to Ashton. With a very few exceptions, game wardens have not heretofore taken their duties seriously; they have been wardens in name but not in fact, scarcely ever stirring away from home unless some one came with evidence sufficient to warrant an arrest.

THE LONG, SLENDER RACING CANOES OF THE SALISHANS OF PUGET SOUND.

THE GREAT CANOE OF THE PACIFIC COAST

C. L. ANDREWS

The Indian of the great plains is inseparable from his horse. When the Indian is west of the Rocky Mountains the horse is called a cayuse, or a "cuitan," which is the same thing in that picturesque polyglot of the Pacific, the Chinook jargon, and the two are inseparable just the same. When the Indian is beyond another range of mountains, meets the wreathing mists of the Sundown Sea and sniffs the salt air, he parts from his cayuse. He has another companion in this region of river and fiord which is just as essential. In the Chinook jargon, which is the medium of intertribal communication, it is known as a "kanim." In the language of the white man it would be a canoe, but this was long ago borrowed from the Sunny Southern Sea, the home of the "carib."

From Oregon to Alaska you may see them drawn upon the beach at every village. The sloping beach is their dry-dock. The village sites are chosen with reference to the opportunity for constructing the dock. There must be a sloping beach not too flat, for it would be too wide at low tide and not too steep, for the canoe could not be brought up the ways. There the ways are constructed. The construction is but the clearing of a long path of rock or shell or other obstruction dangerous to the shapely craft that is to be slid up and down.

If you are seeking trouble it can be attained by interfering with the riparian rights of these villagers in meddling with the "kanims." Chief among these riparian rights are those of dry-docking their kanims and drying the salmon brought in them. An Alaskan governor once nearly raised a riot by attempting to make a roadway along the waterfront

of a village. They were afraid that it would interfere with their dry dock.

Made of the red cedar in the South and of spruce in the North, the kanim is always a trim and shapely craft. The red cedar is the tree most used for their construction, and in fact, the only one where it can be had. It takes weeks of toil to carve them, and when they were shaped and hollowed with bone and stone it was a triumph of construction for such implements. To find a tree, chop it with a stone ax, rough hollow it with fire and rudely shape the outward model was labor. To take the adze, made of hardened elk-horn, shape the delicate lines, carve the prow and stern and smooth it both inside and out, was a work of art.

The building was much the same with all the tribes. After rough hollowing the trunk it was hewn with the ho-tah, or Indian ax, a kind of adze. Then it is filled with water, the water heated with hot rocks, and inside the canoe is placed slender twigs arranged and bent so that the spring of the twigs shape the width. When bent at proper lines the thwarts are placed to keep it shaped.

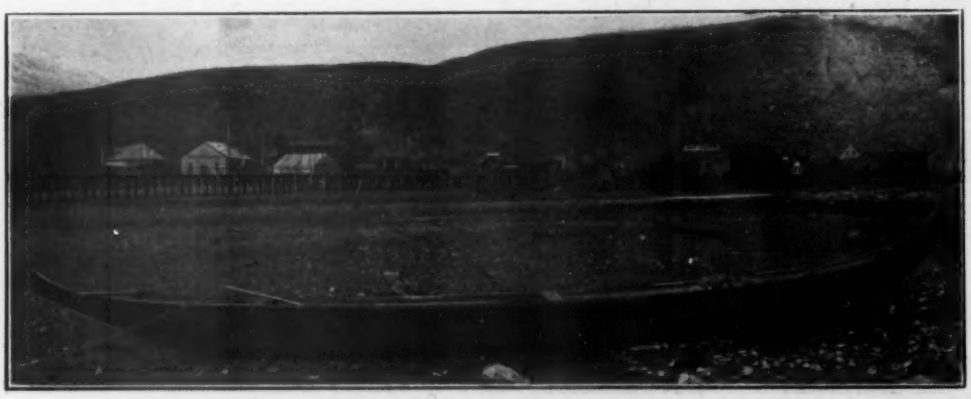
There is a variety of form with the different builders, from the long, slender, racing canoe of the Salishans of Puget Sound, scarce wide enough for a brawny paddler to sit between the gunwales, to the great war canoe of the klinkit, whose carrying capacity is measured by tons. There is also variety in the make of the canoes of the different tribes, and one versed in the models can tell from the shape of the craft where the canoe was built, whether in Yakutat or Quiniault. The canoe of the upper Columbia and of the Snake River Indians is simply a log hollowed out and rounded at the ends. This suffices to navigate along the banks, to fish for eels and to cross the rivers with the swimming horses. Below the dalles of the Columbia the kanim proper navigates the river, and it is not to be mentioned in the same breath with the dugout of the upper rivers. The model which ripples the long, smooth stretches of this beautiful waterway is known by the high, graceful prow and the straight stern which rises perpendicularly from the water. The Indians of the lower Columbia, of Western Washington and of British Columbia all make their canoes after this general shape. This is the canoe mentioned by Lewis and Clarke and this is the canoe of Winthrop's "Canoe and Saddle."

Farther north along the coast the Hy-

THE CANOE OF THE STANDARD TYPE FROM THE COLUMBIA RIVER TO VANCOUVER ISLAND.

dahs of Queen Charlotte's Islands make a wonderfully fine canoe with high prow and stern. They are high for two reasons, one that they may ride the ocean swell without the combing top breaking inside the boat; the other is that it may right itself if upset. These are perhaps the finest along the coast and the product of the Hydah shipyards is more sought after than any other. From Queen Charlotte's Sound to Lynn Canal Hydah canoes may be seen drawn upon the beach at any village among the Klinkit canoes from which they may be readily distinguished. The Klinkit canoe is built with a prow and stern which slope alike, and much the same as the stern of the Hydah, but not so high either in prow or stern. The Yakutat canoes are different from either of the others in the shape of the prow or cutwater, which is shaped like a fishtail. The average canoe of the Alaskan coast measures about 35 feet in length; 5 feet beam and 2 feet in depth, but some of the great Hydah canoes measure as much as 70 feet in length and 7 feet beam. Sir George Simpson in his account of his voyage around the world mentions one which carried a hundred men, fifty at the paddles and fifty stowed in the boat.

All the tribes from Yakutat to the mouth of the Columbia are fine canoemen. Nearly 100 years ago the skill of the Chinooks of the Columbia River was noted by Lewis and Clarke in no uncertain terms, and from the Columbia through all the sweep of the coast of the Pacific North and West they are famous seamen. The Hydahs and the Indians of the peninsula west of Puget Sound divide the honors of being the boldest and hardiest. Queen Charlotte's Islands, the home of the Hydahs, are nearly out of sight of the mainland, yet their dwellers are frequent visitors, even as far down the coast as the harbors of Puget Sound, and north to Chilkoot Inlet. The Quiniaults and the Quillayutes of the coast of Washington are fearless surfmen and launch their canoes through the surf of their almost harborless shore between the Gray's Harbor and the Straits of Juan de Fuca, and they hunt the whale sometimes out of sight of land. Their boats are alike in the high prow, which rides the wave, but they differ in the shape of the stern. They both land their boats with the stern to the sand, easing it toward the beach, where the breakers roll till they are on the crest of a high wave, when they urge the boat stern first upon



THE EYAHK OTLAN, OR GREAT HUNTING CANOE OF THE HYDAHS, ON WHICH THEY HUNT THE SEA OTTER AND WHALE AT SEA OUT OF SIGHT OF LAND.

HYDAH CANOE DRAWN UP ON THE DRY DOCK AND PROTECTED AGAINST THE STORM.

the beach with all the strength of the sinewy paddlers.

The word "kanim" is a name used along the coast between the tribes and is originally from the Chinook language once spoken at the mouth of the Columbia. Every tribe has a name of its own and many have a name to describe every variety of make as nautical phrase has a name for every rig. The Salish of Puget Sound will tell you that the kanim is "kilman," with an unpronounceable cluck to the "k;" also that the larger canoes which are used at sea are "co-co-tash," and this word as well has some unspellable sounds, some without equivalents in the English alphabet. The Klinkit will tell you that the kanim is "eyahk," but if you pursue the inquiry further he will tell you that the great Hydah canoe is "eyahk otlan," that the Sitka, or Klinkit canoe is "tseet" and the Yaukautat canoe is "toheaosch." The Hydahs would give you another name for them, and the Makaha, the Quillayutee, or the Squisaults would give still another.

The canoe is cared for by the owner perhaps better than ever the favorite warhorse or buffalo horse of the Sioux brave was attended by its rider. When drawn on the beach in winter it is carefully covered and protected from the weather. In spring when the paddler makes his way among the islands and along the inlets should the sun shine out brightly he will splash water over it at intervals to prevent cracking. In summer it is taken when not in use to some protected shore and drawn far up into the woods and covered with boughs till no sunbeams can reach it. If it gets bruised or injured he patches with the care and skill of a cabinet maker.

The gaming instinct is strong in our red brethren of the West. With gambling and drinking they are infatuated, but they are likewise worshipers at the shrine of physical prowess. In these inland waterways are magnificent courses and for them the native Herreshoffs shape the lines of graceful racers whose fame goes forth among the tribes as the fame of the Columbia goes forth among the Anglo-Saxons. Long and slender as a racing shell, just room for one row of dark-skinned paddlers between the gunwales, quaint figures of bird, sea-lion or star carved or painted on prow, they are things of grace and beauty. When

the favorites of two tribes are matched for a race, ten brawny paddlers in the seats and the steersman in his place, their backers crowding round waiting to wager their earthly possessions on the race and go home beggars if they lose, there is enthusiasm in the air. As they glide down the course the muscles in the broad backs and the swart shoulders strain, the paddles dip in unison, and the canoe leaps like a thing of life.

The road of the canoe Indian is a waterway. As a babe he is cradled in its bow while the parent hand guides the graceful craft through the mazes of the myriad islands of the Pacific shore, threading its inlets for food of berries or fish, or journeying the thousand-mile highway to the hop fields of Puget Sound. As a child it is his playground; as a youth it is his book from which he learns the laws of inertia, the resultants of forces of wind and tide. In his manhood he is an expert in its navigation and drives it far and near along the rough stormbeaten shores for fish, seal, whale and other ocean spoil. In it he rides to war in as deadly feud as ever Norman waged, and many and bitter have been his quarrels. In it he goes to the potlatch to feast and make peace.

The canoe Indian is a passing form. Whether he gathers to the music of Catholic bells on the Columbis, is a devotee to the swinging censor, the silver chime and decorated altar at St. Michael's Cathedral at Sitka, or whether he deals in the subtle mysteries of witchcraft at Yaukautat, he is passing off the scene. All the ills that flesh is heir to are in his blood and often, too often, the mourners follow the well-known path, and the death-wail rises from the burial plot. When his broad back and brawny arms have driven his craft through the devious ways of a long and turbulent life and its prow grates on the pebbles of the last landing, when "Tehl," the Raven, mutters at him from the tree-tops and tells him that his journey is over, it is meet that the vessel that has borne him through life should be his last resting place, and the "Tehl" should stand in carved solemnity at the top of his funeral totem, for has not the faithful canoe carried him through all these years and has not "Tehl" hovered over him as he journeyed and greeted him at his landing all along these stone-beaten, forest-clad shores?

ITS PROW GRATES ON THE PEBBLES OF THE LAST LANDING.

MT. BAKER, WASH., SHOWING ONLY THE UPPER HALF OF THE GREAT VOLCANO, OR THE PORTION ABOVE TIMBER-LINE.

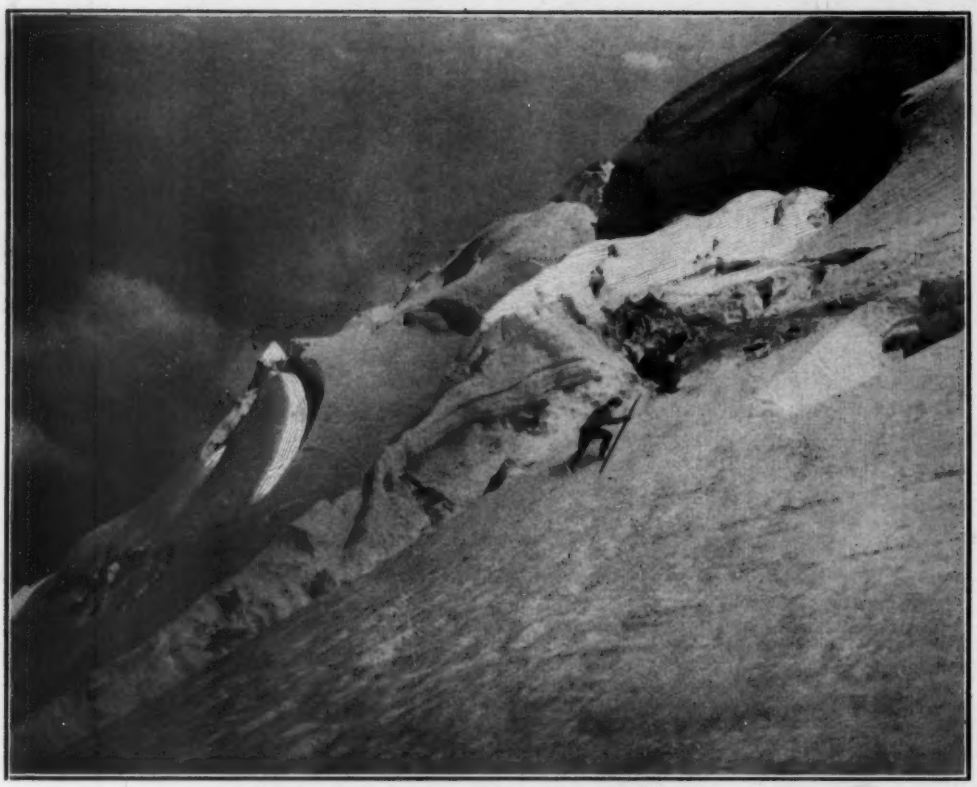
THE MT. BAKER MARATHON

CHARLES FINLEY EASTON

During the summer of 1911 a novel phase of outdoor sport was indulged in by the people of the extreme northwest corner of the United States. It was not only the people of this community, but the whole Pacific Northwest was alive with interest and excitement over a remarkable racing event afterward known as the Mount Baker Marathon.

Bellingham is a city of thirty-five thousand, with its docks on barnacled piling in the edge of Puget Sound, Wash. Inland thirty miles by air line is situated the wonderful volcanic cone of Mount Baker, over two miles high, furrowing through cloudland with its very summit, like an immense iceberg, in almost perpetual sunshine above the clouds. It was from Bellingham to the summit of Mount Baker and return that the races were run.

When Coræbus won his famous foot-race and his friends and admirers celebrated the event, it marked the beginning of a great period in the history of the world. It was never intended this way, but the little contest, aside from the mere human interest it excited, fitted the Greek ideal that the body of a person had a glory as well as the intellect and spirit and that the discipline of the one assisted in the improvement and development of the other two; so, to carry out their sacred idealism, as well as for the fun of the thing, more races were pulled off. It took them four years to think it over and train up for the second Olympiad.



AT 10,000 FEET ALTITUDE. RACING FOR THE SUMMIT OF MT. BAKER.

Evidently foot racing wasn't a very active mental stimulus, because it took thirteen Olympiads of this kind of culture before it ever occurred to these Greeks that there might be any other kind of stimulating exercise, like wrestling, jumping, boxing, or splitting wood, that would aid in accomplishing their ideals, and still longer before they considered this physical culture suitable for anybody else, which it wasn't, when practiced for amusement only, disregarding the moral and religious ethics, as is evidenced by the variations and beastly degradation to which it was later carried by the Romans and even by the Greeks themselves.

The old Greek philosophy has been revitalized by the modern school in that athletics have become a factor in student training. The same principle applied to every-day life in clean, wholesome amusement and entertainment makes for the genial co-operation, social uplift, improvement and advancement of a people.

The Mount Baker marathon was a holiday out of the ordinary. Everybody took part in it. It was something that all could enjoy. It was surely a stimulating diversion to the community.

The race course was by two routes, starting from the Chamber of Commerce in the city of Bellingham, to the summit of Mount Baker and return, one route by way of Deming and the Middle Fork of the Nooksack and the other by way of Glacier and a branch of the North Fork Neither course was direct. The round trip by Deming was approximately eighty-six miles, thirty-two of which

must be made on foot, the balance—the start and the finish—by automobile. The trip by Glacier was one hundred and eighteen miles, twenty-four of it on foot and the rest by railroad. Contestants were given the choice of routes.

From the points where conveyance ceases, on both routes, on up to timberline, the foot trails were both through dense forests. There were about four miles of ice and snow work from timberline to the summit by each of the routes and in these four miles another mile in altitude must be climbed.

Referees were stationed in blankets and furs in the Arctic region of the summit to register the up-coming contestants and issue clearance certificates for their return.

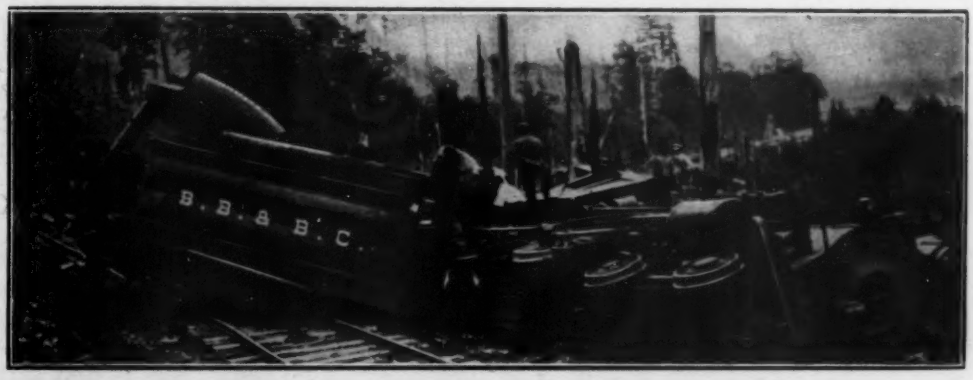
Twenty entries were recorded; when the time came for starting, the number had dwindled to fourteen. Six selected the Deming trail with automobiles for the start and finish. The remaining eight were provided with a special train by the Bellingham Bay & British Columbia Railway to speed them to the end of their trail at Glacier, the first one returning from the summit to have the special to bring him back to the city.

It was agreed that the race should begin at ten o'clock at night with the track cleared for the special and the wagon road guarded to avoid obstructions to the autos. This necessitated running the forest trails by lantern but enabled the racers to reach the ice by early morning and make the stiff mountain climb before the softening of the surface snow under an August sun. Both approaches were from the west on the shady side for the morning climb.

At nine o'clock on the evening of August ninth the fourteen contestants assembled at the rooms of the Chamber of Commerce and the streets packed with great throngs of spectators. The special train was in readiness a block and a half away. Four automobiles were lined up on Dock Street in front of the Chamber of Commerce, throbbing to dash away.

Promptly at ten o'clock that night, at the drop of the hat, the contestants leaped for their respective places and were gone. The flashlights of cameras and the cheering of the crowd signaled that the race was on. The sidewalks for two miles were lined with people to catch a glimpse of the racers.

The whole city and country had gone wild with enthusiasm, but after the



RESCUING ENGINEER GOLITHAN FROM WRECK OF THE SPECIAL TRAIN IN THE BELLINGHAM-MT. BAKER MARATHON.

racers once reached the foot trails no news was to be expected for about twenty-four hours.

Few persons except mountaineers really comprehend the stupendous physical exertion required to hurriedly climb such high mountain peaks as Mount Baker, and, even most of the mountain climbers fail utterly to see how it is possible within the powers of human strength and endurance to accomplish the feat in the time actually recorded by five of the best of these athletes

The greater part of each trail was through dense forests and this portion was traveled on the run, in the blackness of night, with only a prospector's "bug" to guide their footsteps.

The fight for endurance began with the snow fields, for here the elevation was gained more rapidly and the atmosphere gradually became rarer. Like money during a panic, it gets especially rare just at the time you have the most use for it.

MR. GALBRAITH.
Winner of First Honors.

Some of the dozen Mount Baker racers dropped out of the contest early in the game. To climb the twelve-mile Glacier trail to the extreme summit in six hours and eighteen minutes, as was done by one Hazzard, with Randle a close second, right at his heels, making a clean elevation of ten thousand feet in that distance, or, what is still more wonderful, the sixteen-mile Deming trail, to the summit, in six hours and thirty-seven minutes by Magnuson, followed by Galbraith, only six minutes behind, making approximately the same climb for elevation, is a marvelous feat, to say the least.

The writer has been over both of these routes and understands the conditions precisely. Estimated by the law of moving bodies, the equivalent of Mr. Magnuson's sixteen-mile climb up to the top of the mountain, allowing an extra thousand feet for undulations, is eighty-four and six-tenths miles on a level track in the same length of time.

In units of physical energy, granting the bodily weight and muscular and breathing capacities of the four best racers mentioned, two by each trail, to be identical, the ratio of the two routes, in the conditions they then were, is two hundred and thirteen to two hundred and thirty-five. The deductions made are only for the comparative energies required to make the up-trip, the return of course taking less time, due in part to the law of falling bodies, but requiring almost an equal amount of energy.

Four of the contestants registered at the summit within a period of twenty-five minutes. Each one was detained four minutes and protected from the stinging blast by blankets, during which time he was registered and then started on the return course. The three referees now abandoned the crest of the summit on account of the cold wind and retreated to a tent they had pitched on the ice, down by the crater, where they had made their camp the night before. Here they intercepted the fifth man, Riddle, handicapped him forty minutes and turned him back, then broke camp and made their way for a milder climate.

The other contestants had given up, at different stages of the game, when meeting the foremost ones on the return, or, when thoroughly self-convinced that they were not equal to the occasion. Randle, who made such a notable record on the ascent, was disabled on the return trip, though not painfully, and later was brought back to Glacier by horse.

At one minute past nine, in the morning, Mr. Haggard was back to the end of the trail and the special train pulled out with him for the city. The announcement took the people off their guard, and so utterly incredible did it seem, that the message was at first generally accepted as a fake. He was reported to have made the climb in six

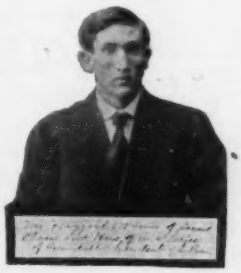
hours and eighteen minutes and the return in three hours thirty-nine minutes —twenty-four miles, the round trip, on foot, in nine hours and fifty-seven minutes—a marvelous record for mountain-climbing, considering the character of the route and the elevation. This was quickly followed by another message that the special, going at a mile a minute, had struck an animal on the track and had gone into the ditch. Excitement now began to run high. Connection was made with the line-wire on the spot by some of the train crew, and another message sent in, from the scene of the wreck, that, miraculously, not one of the fourteen comprising the crew and passengers was much harmed. Golithan was at first reported hurt, but was taken out from under his engine uninjured.

It looked hopeless now for Haggard to win the race, but he didn't seem to think so himself. The young man was quick to turn defeat into opportunity. A passing horse and buggy was impressed into service and the driver whipped up to reach the nearest point where an automobile might perchance be had. They soon reached Maple Falls but found no auto. A riding horse was saddled and a wild ride for Kendall, the next station, followed. Haggard had no previous acquaintance with the animal he was riding, but the cayuse took no exceptions to the informality and did his part to get there. When he reached Kendall, Haggard was bucked off his horse into a heap in the middle of the street—another incident in the chain of events which happened to him without broken bones.

News now came that Mr. Galbraith had returned and was speeding by auto for the city. He had made his thirty-two miles on foot, over two miles up into cloudland and return, in ten hours and forty-two minutes, a truly astonishing record for physical power, and, considering altitude, distance and one stop, at snow-line, of forty-five minutes, for breakfast, had established a record which may never be broken.

Haggard was gathered up and loaded into an auto, not very much the worse for his experience, and started once more for his destination, but with little chance now to win first place, unless one of his fates should intercept the valiant Galbraith.

Magnuson, who made the best record of any on the up-trip, considering his delayed start and the distance he covered, failed to make good on the down-hill pull, but was now reported at the end of the trail with a fair chance to reach the city in time to precede Haggard.



MR. HAGGARD,
Winner of Second Place.

At ten twenty-eight that morning Galbraith reached the Chamber of Commerce, amid the deafening cheers of the great crowds, winning the trophy and first place in the notable Bellingham Mount Baker marathon. Business of the city was virtually suspended for a short time to see the finish. He made his eighty-six miles in twelve hours and twenty-eight minutes.

At exactly eleven o'clock, Haggard arrived. Leaping from his seat in the auto, that had twice failed him for short periods on the home stretch, he ran half a block to avoid the press of people, and won second place.

Magnuson came in a half hour later and Riddle fourth, allowing his handicap. The other contestants were all accounted for, and there was great rejoicing that none of the accidents and mishaps were very serious.

No. 4

In the Beginning

Once upon a time (as all fairy tales should begin) I went deer hunting. I traveled 2,000 miles from New York City to Denver, then seventy more miles on a pass and fifty additional miles on a stage coach. It was only an express wagon, but we called it "the coach"—just why, I don't know.

Then I packed my stuff into the mountains a little way and camped by the side of a small trout lake in as peaceful a grove as ever classic Greece knew. With me was a murderous .45-90 Winchester, and no books. No, siree! No books. I had come over two-thirds the way across the continent to hunt, to fill my lungs with Rocky Mountain ozone, and all that. So I shot all my cartridges away at a stump across the lake and spent the other six days and an afternoon, thinking. We smoked a little, of course—I and the fire.

When my trip was over—and I had returned the borrowed tent—others in the vicinity smiled broadly over my abilities as a hunter, but I borrowed a match and said nothing. I had been trailing bigger game than they dreamed of, and most of those trails ended in a cave. I hung up some of the trophies in the back of my head, and we will now proceed to take a look at them.

As I knocked my pipe against one of the fire logs I thought: "When, where and how did man get fire? Why does he smoke a pipe?" Then I put my nose in the grass and the trail led me far, both in time and space, far back to what today we call Asia Minor. But first a word concerning what we call "history."

"History is a lie agreed upon," said Napoleon. "History is most remarkable for what it does not mention," remarked a great Englishman. "History is but an almanac—a catalogue of battles and kings," comments another. "Fossilized rumors" would be my definition of history.

And for this reason: Some event occurs of world-wide interest, like the wreck of the Titanic, for instance. It is right here today, hundreds know about it from personal contact, every effort is made to get the fullest and most correct account of the affair, yet see how the newspapers differ about it; how the people personally concerned in the wreck not only give different accounts, but even flatly contradict one another. That the "newspapers are unreliable" is a common phrase which few dispute. But we solemnly accept as perfect truth the alleged statement of one, or at best of a few persons that has come down to us by word of mouth through generations, before it finally was put down in writing. Why should rumor a hundred, a thousand, or ten thousand years old be any more reliable than rumor only a day or a week old. Yet this hoary rumor we call "history."

In running down various stories that we now know to be mere rumors (an old rumor is called a "legend"), but that for centuries were accepted as a true account of actual facts, we noticed this: That a guess of one century became a conclusion in the next century, and was accepted as a fact in the following century. Have you ever looked at history in this light: "How much of what we accept today as history would be accepted as evidence before the Supreme Court of the United States or of England?"

Caesar, for instance, was a politician,

seeking to become the "President" of Rome, and later its Dictator. From our present knowledge of politicians it is a fair guess that he wrote his "Commentaries," not to record what actually took place in Gaul (France) and elsewhere, but to boost his own fortunes among the Roman voters, just as politicians do today. Suppose we today should take the public speeches of any leading politician and teach them in our schools as a true and full account of what takes place in the United States, year 1912? The Congressional Record would then be put on a par with nine-tenths of the ancient roots out of which grow most of what we call "history." Yet the plain, common sense fact is that the Congressional Records of Egypt, Greece, Rome, France, Spain and England were not only not as correct as is our own Congressional Record, but much less correct. In Egypt, for instance, if the "historian" put down anything on the rocks that might displease the King, then said King promptly saw that said historian got a free shave, extending horizontally from the Adam's apple to the back of the neck—and the next historian was more careful.

So on all this, perhaps our own guesses today about many things, that no man knows but that many have guessed about, might be as correct as any. Let us now go back to the campfire and knock another cold pipe bowl against the smouldering log. "Where, when and how did man get fire? Why does he smoke a pipe?"

Man probably found fire and used to warm himself by it, or seek its presence as a protection against other animals, long before he himself could manufacture it for his own use. This is also probably true concerning most of the other things that man has. He found the horse, chicken, dog, iron, copper, wood, seeds and a hundred other things in their native state, and used them, before he finally began to make, breed, farm, etc.

Then man learned that he could carry fire about with him, but of course he had to feed it constantly. No doubt a torch was the first pipe. Then he perhaps lit a hollow stem, and by carrying it in his teeth, and puffing occasionally, he thus could keep and carry his fire, and still have his hands and mind free with which to hunt, or avoid his enemies.

As a matter of taste, he soon learned to choose certain woods to thus keep alive, as the smoke from one kind was more pleasant, or rather less unpleasant, to him than the smoke from some other woods. Cedar bark, for instance, would hardly make a good cigar. Later, when he had discovered how to make a pot of clay, he made a clay (or carved out a stone) fire pot small enough to carry in his teeth, or in his hands. The stone hurt and dulled his teeth, so he soon learned to insert a wooded stem, a hollow reed, perhaps. Then he noticed that not only were various woods of different flavor, but that parts of one plant were better for this purpose than others. So in time he learned to select pleasant-burning leaves. Today man has settled on the leaf of the tobacco plant as the most pleasant-burning leaf known—hence I am smoking mine pipe beside this log fire as did my hairy ancestors eons ago. Tonight I do for pleasure, following an inherited instinct as old as the dam-building instinct of the beaver, what old Grandad Caveman did out of sheer necessity, that he might always have fire with him.

And out of this also came the altar fire. Man, having learned to mate and to raise his young in one spot—for a time, at least—found that he need not carry his fire around with him all the time, so a blaze was always kept burning at camp. As there was no need of each cave family thus keeping its separate fire, the custom soon grew to have one fire, always attended by men or women who had nothing else to do but to protect this almost priceless asset of the camp. Necessarily, these people, having to attend the sacred fire, had to be fed, as they could not go out in search of food for themselves. And to insure that they did their work, it was death to let that one central fire go out, as it might mean the extermination of the whole camp from wild animals, or cold, before they could find more fire, accidentally kindled in the dry forests by lightning, dry limbs rubbed together by the wind, falling rocks, or the various other ways that forest fires begin. If the time happened to be winter, then the loss of the altar fire was almost sure death to the whole camp—

hence the rigid death penalty to those who neglected it, hence the vestal virgins of the Roman empire, or our own lighthouses of today.

The custom still lingers with us in other forms, too. Every man has a foot-rule, for instance, or a weighing scale, but these would be more or less useless unless at Washington, D. C., there was (as there is) a certain set of standards. We also can see traces of the old altar fires at any railroad station when at a certain time each day all the clocks are set exactly alike by telegraph from one central station in Washington. In fact, that Old Fire was practically the beginning of all government, of all centralization, of all co-operation. It was the first thing men combined to use and protect for the good of one and all and to the injury of none. And this old corn cob pipe is older even than that! No wonder I love it.

Among several bad habits man has these three might be mentioned here. He has the bad habit of thinking in set terms; he has the dangerous habit of mistaking memory for brains, and he has the vicious habit of thinking in averages. Take the first, for instance. "Who invented the locomotive?" has kept many a bewildered schoolboy in after school, and when the fishing was good, too, or the baseball nine just had to have him or lose the pennant. When he stood on one foot, then on the other and mumbled: "Don't know." He was right. The teacher, insisting on some certain name, was wrong, and for this reason no one man ever invented anything. Every invention is a growth, and is linked with other inventions way on back to the time man invented a weapon by picking up his first stone to throw or first club to swing.

When man wanted to stop up the door of his cave he carried stones and piled them up, but the sabertooth tiger could all too easily rake this light, loose stuff aside and lunch on the family. The experience of his departed and digested neighbors taught man to use stones for blockade purposes heavier than the tiger or the cave bear could claw aside, but incidentally said stones were also bigger and heavier than man himself could carry. So he rolled them. Out of this came the wheel (the wheel, and the knot, and the pipe are probably man's three greatest inventions) and the ox cart. So one day about a century ago, or a trifle less, man put his cooking pot, his pipe, his round stone cave door and a piece of vine together and called them a "locomotive." The wheels came from the rolled stone, the boiler is the cooking pot, the firebox (flues and stack) is his pipe and the connecting rods (including levers and couplings) is his bit of vine. Or perhaps his piece of vine was a whisp of grass, just as we today still bind things with oat or wheat straw, and some of our best ropes (those long thin ones we fish with) are still of twisted grass, which we call flax, or linen.

There are only a few things in the universe known to man, but he gives each one many different names, and thus fancies that he knows a great deal more than he does. For instance, "rope, chain, fish line, twine, wire, couplings, rods, lariats, handcuffs, belts, straps, harness, rigging, hawser, sling, block and tackle, string (including violin, piano, etc.) cable"—we might go on for several pages, but this is enough here—all are various names for practically one thing, of which "rope" is perhaps the mother word. So when the little boy admitted that he did not know who invented the "pot-pipe-boulder" thing renamed "locomotive," maybe he was right after all.

I'm afraid Dear Teacher would have to keep me in for about sixty-four centuries, for I don't know. Incidentally, I never got along very well in school. I was constantly asking the teacher "Why?" or "How do you know that is true?" and as the only answer the usual teacher can give is: "Because it is in the book, and you must say what it does"—well, "But who wrote the book, and how did he know?" So far as I could ever see a book is only a newspaper folded smaller and thicker between two pieces of pasteboard, and I've written both books and newspapers. Two words for the same thing. And no way you can fold a piece of printed paper will increase or lower the truth of what is printed on it that I can see, or ever could see, even as a school boy. In fact, I was never any good in anything except mathematics, in which I established a record that has stood for twenty-two years, and I failed in "English and composition" regularly every year. But I nearly wore

out the public library, which answered many questions the school teachers could answer only with frowns. All of which harks back to recent remarks about history and newspapers, you will notice.

But as we were speaking of tents in the last talk, by the way, "where did tents come from, Willie?" "Come now. if you can tell who invented such a complicated thing as a lomocotive you can surely tell us who invented such a simple thing as a tent." Willie wisely shakes his baseball head, but if he had said "cave door" he would have probably been about as near right as any man is likely to know. When things got fairly peaceful in town, so that only a few people were killed every night, Mr. Caveman probably used the hide from some animal for a door instead of that heavy stone, or at least used the hide during the day and the stone at night, especially as the hide kept out the wind and rain and cold when the stone was not in place. From this it was a simple matter to rig the hide over a bush or a tree limb, then two hides knotted together by the legs, and here was the daddie of all the tents. From hides men went to cloth, then to wood, bricks, stones, and now to iron and steel for material to make his tents, and they still hang over the door to the cave he calls the cellar or basement.

The blanket, of course, grew directly out of the hide of the skinned animal. It is only a short and obvious step from a sheepskin to a woven wool blanket, and once that was done, other light fluffy stuff easily followed, like cotton. Our most elaborate bed springs are only metalic boughs piled in a heap. Carpets are only another name for blankets. The same with curtains, rugs, hangings, table clothes, napkins, sails, etc. All different names for practically the same thing. When we change a thing's size or color or use we usually give it a new name, merely as a matter of daily convenience, but the object remains the same, just as the man remains the same if the court changes his name from Jones to Smith.

"And where did the rifle come from?" Now, see here: "Didn't I tell you in the very first of these talks that the Czar of this institution decreed that I must not write about guns and cartridges in this department? I fancy he is afraid of them, and thinks they might explode if we had any such dangerous things around these pages. He said Haines and that crowd were giving him trouble enough back there, and he had all he could do to watch them, and he did not want me to attack him sud denly and unexpectedly in the rear with a long-range elephant rifle, that in the next issue some crank would swear wasn't big enough to kill humming birds with. I guess he gave me these pages much as if they had been a dab of molasses and a feather, and set me off here in a corner to amuse myself quietly and not bother him. But anyway, come over here where we can whisper and I'll tell you all about it.

Once upon a time your and my several-times great grandad got into trouble. No tree was handy, so he reached down, grabbed up something and threw it. Then and there he invented the rifle, but it needed a few touches a little later by Mr. Winchester and others to bring it up to our refined tastes. However, no matter what that Something was, an old tree limb, a stone, or an old bone, man learned then and there how to apply energy at a distance, which is all any rifle can do. Later he learned that he could throw a stone, and eventually a round stone. farther, stronger and straighter than anything else, so out of that came the sling. after he had tied a string to the stone to give him more room for action, of course. Later he figured out how to retain the string, and let the stone go free. This was the final form of the sling, which later became one of the parents of the rifle. Man still uses the old form of the string fastened to the stone in the bolas, which are simply several small stones, sacks of sand, or metal balls—depending on the use for which it is intended—each fastened to a string, and all the strings knotted together at the end. I have often wondered why the police did not use them to stop runaways. A half pound bolas that can be carried in the pocket can easily throw and hold down a runaway horse within ten feet of the place where it entangles him. And savages have killed or caught millions of flying birds with them.

Here this branch of the rifle rested for centuries. Now we will look at the other side. When Granddad found that he could

throw a stick farther end-first than end-over-end he began to experiment. He soon found that he could throw it harder and farther with two hands than with one, mighty as that right arm of his was. But he could not throw it so straight, as he could not let go with both hands at exactly the same time, so he learned to tie a string to the back of the "spear" and jerk on the string with his left hand. Then he used a shorter stick in his left and tied the string to the short stick, and merely let the string catch in a notch in the longer stick, or "spear." Here he had the "dart," which the small boy creates by instinct out of a lath, a piece of twine and half of another lath. The small boy, by the way, is the only chap who uses the dart today, and his knowledge of how to make and use it is purely instinctive, for he usually forgets how to do it when he becomes grown.

Now Granddad, like the small boy, found that if the smaller stick in the left hand had a spring to it, so much the better. Here was the beginning of the bow. Later the left-hand stick was made longer and still more springy, the string was tied to each end, the spear was shortened to an arrow, and we have the bow and arrow. The first arrows were hollow reeds, with the tips filled with sand. Feathers on the rear end came much later, really a matter of civilization. Incidentally, the broken piece of flint and the clamshell became the knife, and the spear and the knife grew together into the sword. The club, out of which grew all of them, in time became the hammer, then the ax. Man added the shield and the helmet, of which our derby and silk hats of today are relics, and so matters stood for centuries.

Then one day man tied the arrow to the bow, drew back the string, put the stone on the arrow, and let her go. Here was the bowgun, the mating of the sling and the bow, the real beginning of the rifle. Soon he put a top on the arrow, and he had a barrel, but with slit for the bow string up each side. Then he closed these slits, took off the bow and string and put powder in the barrel behind the stone, now called a "bullet."

"But a rifle is no good without powder, and where did powder come from?

I don't know.

Reggie

(Would-be Bad Man.)

Although it takes a beastly nerve,
I've straddled 'round the sides of kegs:
(I'm told it forms the proper curve
To full-fledged Western cowboy legs).

I've wobbled 'round on high-heeled boots,
Can manage well the cowboy stride;
In fawncy been on develish toots;
My monocle I've laid aside.

I've decked myself in chaps and belt,
For weeks I have not slept on springs.
I own a hat of floppy felt,
Learned "savvy," "quirt" and other things.

By jove! I feel quite satisfied,
I carry out the part right well!
A 'kercher 'round my neck I've tied,
And dropped "Ye Gads" and now say, "Hell!"

I've been in camp one week today;
"We'll shorely paralize the dude,"
I overheard one cow-chap say;
And then again in accents rude:

"We'll 'nitiate the leetle shrimp.
In this here camp he's met his doom;
We'll make the tenderfoot look limp,
For, boys, he's lousy with perfume!"

I'm ready for them, every one.
My sakes! when roused I'm deuced rough
They'll soon see I am not in fun,
For Reggie's made of fighting stuff.

EFFIE McDOWELL DAVIES.

The Gun Sling and Its Use

By L. A. Danse.

Looking over some back numbers of Outdoor Life several letters and articles discussing the advantages of the sling strap struck the writer in a soft spot, and on thinking over the number of gun men who do not know the comfort to be derived from a well-fitted sling, especially on a rifle, the decision was made to give them a few pictures and a short description of the various uses to which the strap can be put.

The first thought when a sling strap is mentioned is of a means of carrying the gun on the shoulder of the shooter and leaving the hands free from the weight and incumbrance. Truly, this is one of the greatest benefits in its use, but this is only the beginning of its possibilities. There is no doubt of the handiness of a sling when climbing through rocks or brush, to leave the hands ready to help progress in a tangled growth or on a steep hillside. Or returning from the hunt tired, with a bunch of game that grows heavier at each step, and a long walk to camp, the stout shoulders of the hunter offer respite to the hands by taking care of the gun and keeping it out of the way.

There are few of our riflemen, outside of the army or National Guard, who are acquainted with the use of the sling on a rifle as a means to help the holding and increase the ease with which the piece may be held steady for the shot. They view with wonder akin to awe, the postures and contraptions used by the Shuetzen brethren to aid their holding, not thinking that there may be applied to their favorite hunting weapons a device essentially simple and yet that will help wonderfully for the occasional long-range shot.

Recourse is sometimes had to a rest over a stone or log to help steady the arm in the hands of the shooter, who may be nervous from sight of his quarry or perhaps winded from a climb while stalking. Then, there is the chance that the shot will be high on account of the fact that the natural motion of the barrel in recoil is interfered with by the solid rest. The military shot has a system of holding in the prone or sitting and kneeling positions, which allows the piece to follow very nearly the same antics which it is wont to pursue in offhand work, and at the same time allows of precise holding and steady aim on the target. The sling is the means of aiding, in large

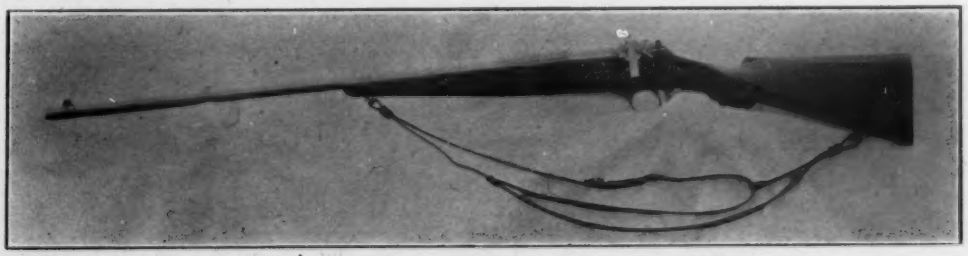


FIG. 1.

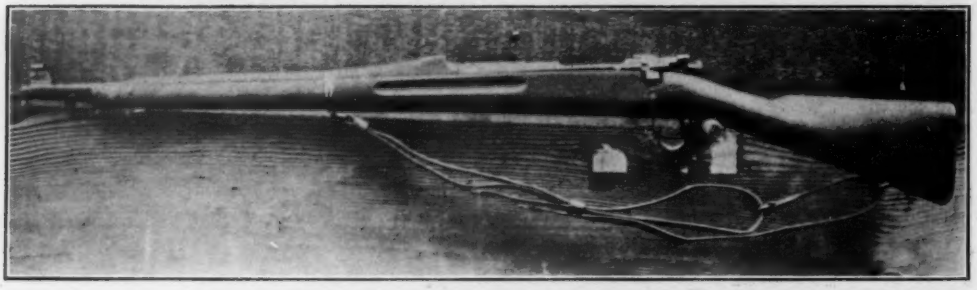


FIG. 2.

measure, to tone down the wobble to something resembling close holding.

For strictly offhand or snap shooting at game at short or medium ranges, the method used by the military shot for slow fire, offhand, would be more of a hindrance than a help, but for the standing shot or the long shot, where steadiness is at a premium, pointers can be taken from the long-range military shooter. The use of the sling is taken up in detail in several excellent works on shooting and in the handbooks of the government, but as our armorers do not consider the sling anything but a means of packing the weapon, they do not sell slings which can be made use of to hold. In Figure 1 is shown the writer's Ross rifle and the design of strap he uses on it. This is taken from the military sling and also from the design put forward by Lieutenant Whelen for use on sporting rifles.

As shown in Figure 2, the service rifle has a strap, which is on the same principle, but the service rifle, being made for use by men of every build and shape, must be made to be easily adjustable. Therefore it is made with the claw in the arm loop, so the size of the loop can be regulated to the peculiarities of the user. The sliding strap, with its claw and ring are practically the same as the writer's design and the arm loop follows the same scheme, being made with adjusting claw and numerous holes in the opposite end of the strap, in place of the buckskin lacing in the writer's sporting model. The latter, being made and fitted to the individual user of the gun, is adjusted and laced up to fit him alone and needs no further tinkering.

Figure 3 shows a Savage featherweight rifle, illustrating the adaptability of the sling to any form of action. As will be noted from the cuts, the sling consists of the arm loop, with its lacing, keeper loop and swivel and the sliding strap, with its claw, ring, keeper and swivel.

The swivel for the arm loop should be fastened to the fore-end of the rifle far enough forward so it will not interfere with the shooter's grasp of the arm when firing offhand. Then, the size of the loop should be found by trying the arm and sling in the different positions taken up later. The length of the sliding strap and the position of the swivel for it are dependent on the size of the stock and the length of carrying strap thus made necessary. It will be noted from Figure 4 that although there is a great difference between the Savage and the Ross rifle, not only in size, but in every way, the slings are made so that they both hitch to the fore-end at about the same place and also reach down on the stock to the same distance. This is to bring the arm loop to

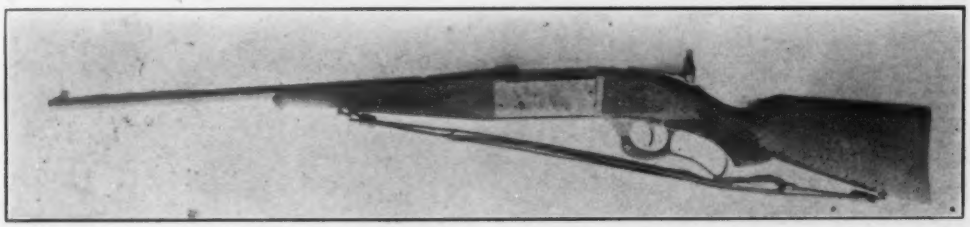


FIG. 3.

the proper position to hold the butt of the piece against the user's shoulder, when using the sling in the prone, sitting or kneeling positions.

Figure 5 shows the use of the armloop in the prone position, for long-range shooting, as used by military sharps at 500 yards and over. The body should be kept as close to the ground as possible and at an angle to the target of about 20 degrees. This latter will depend entirely on the shooter's build. But if he attempt to lie straight, head-on to the target, he will be unable to properly assume the position. To take this position, the sliding strap is slackened until the armloop is free, that is, until in a strap of this pattern, the claw on the sliding strap and the ring in the other end come together. This is done by taking hold of the armloop and sliding strap claw and pulling the armloop down toward the butt of the gun, as shown in Figure 6. There is no other fixing necessary than a straight pull. Then the left arm is passed through the loop, so as to bring it well above the elbow on the upper arm and the hand and wrist passed under the loop and up on the left side of it, so the hand grasps the fore-end. The hand should not grip the fore-end tightly, but the piece should lie right down in the palm on the hand. The left elbow should be kept as nearly directly under the piece as possible, to provide a steady rest for it. The right hand should be free to attend to the action and trigger, the gun resting in left hand, the pull of the sling holding it

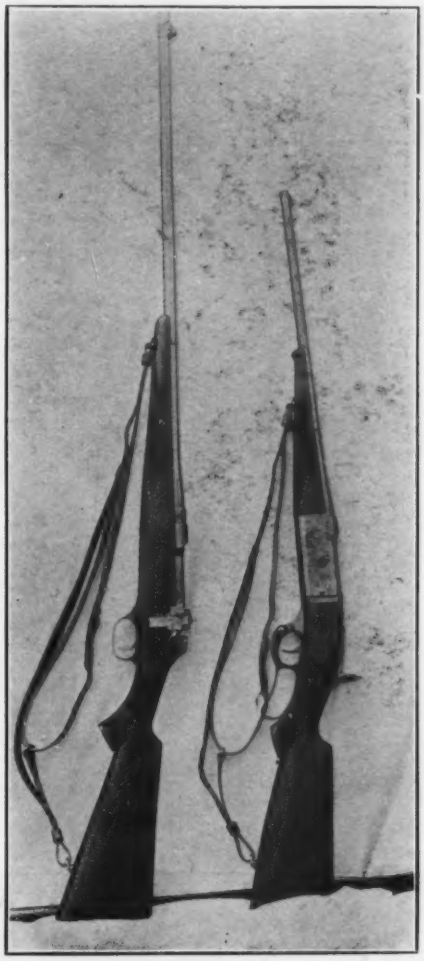


FIG. 4.

FIG. 5.

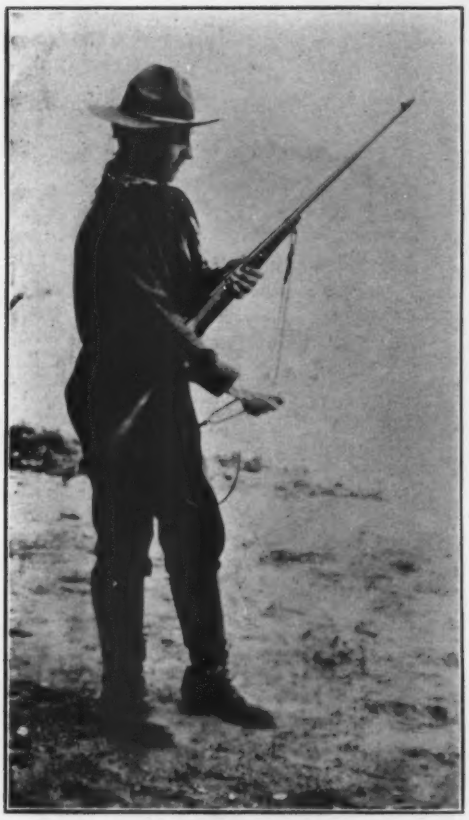


FIG. 6.

FIG. 8.

back hard against the shoulder. The sling does practically all the work of holding the piece, with the left hand and arm, while the right hand has only to manipulate the action and pull the trigger. When the proper posture is taken there will be no strain felt by the body and the piece will lie in the line of sight without effort to bring it there.

In Figure 7 is shown the method of holding in the sitting position. The sling is

FIG. 7.

used in the same way and the elbows rested on the knees to give steadiness. This position is more easily assumed than the prone and is used at 300 yards in military work. Another position used at this range is the kneeling, shown in Figure 8. The sling is used the same way as in the other positions and the left knee and arm kept in as nearly a straight line under the piece as possible. The right leg is doubled under the body of the shooter and the foot used for a seat. There is an old joke that this position would be very inconvenient for a cavalry man to assume with his spurs on. This is the easiest of the positions to take outside of the standing offhand.

There are various other positions in use, but these will answer the requirements of the hunter and the average target shooter, especially with a sling of the type illustrated, so the others are not shown.

To return to the original use of the sling —to carry the piece—the writer would state that he uses straps on all his rifles and even shotguns for this purpose and will testify to their efficacy from experience.

The .22 Savage High-Power Rifle

By Ashley A. Haines.

I had hoped to have received my .22 Savage high-power rifle last season in time to have given a trial on deer, but, unfortunately, it failed to reach me until after the season closed. Shortly after its arrival, delay in reaching me having been due to the customs house that intervenes between the writer and factory, I was taken sick, which prevented writing impressions of the "little terror" at the time, and to still further delay my breaking into print the makers requested the gun's return to factory, as experiments then under way had suggested a breech block, carrier and cartridge-guide differing somewhat from the ones regularly supplied on the other calibers. This meant more delay for the long-promised write-up, and to still further prolong it, the first cartridges sent with the gun were the experimental ones which were hardly satisfactory, due to primers bursting, my own experience with them being one pierced in about every twenty or twenty-five fired. Even now I am not prepared to make positive statements regarding just what this gun with the new ammunition will do as the new cartridges—the ones which will be placed on the market and which are free from the defects of the experimental ones — have been in my hands less than a dozen hours. There have been so many queries, however, concerning this arm and the ammunition adapted to it that I hesitate no longer in giving my impressions concerning both.

The rifle is the same in every way as the regular '99 model Savage in the larger calibers, excepting the barrel is a very light one, beautifully tapered, rifled with a 12-inch twist and chambered for the Savage .22 high-power cartridge, which was developed by Mr. Charles Newton, and the fact, as before noted, that the carrier, breech bolt and cartridge guide differ from the ones in rifles handling the larger cartridges. Attaching such a short and light-weight barrel to the receiver originally intended for the .303 cartridge does not, in the writer's opinion, produce as symmetrical an arm as when same receiver is equipped with the standard weight and length of barrel, but as the head-diameter, and over-all length of the .22 Savage high-power cartridge is practically the same as that of the other cartridges adapted to the '99 Savage, it will be clear to anyone that to have produced a lighter and better-proportioned rifle for the .22 high-power cartridge an entirely different action would necessarily have had to be designed. The simplicity, strength and reliability, not to mention popularity, of the '99 Savage is well known, so it is unnecessary to dwell upon these features here. In using practically the same action for the new cartridge the shooter is assured of all the desirable features to be found in the Savage using the older and better-known cartridges. The only feature about the new .22 high-power rifle that the writer is inclined to regret is the fact, as alluded to before, that the arm is hardly as well proportioned as in the regular models. This is only an individual opinion, however, and may, or may not, be shared by others.

The average weight of these .22 high-

power Savage rifles is about 6¼ pounds, a feature that is being constantly called for by the hunter of today. This may seem light enough for any purpose, but it will not be a surprise to some of us should rifles handling this or similar cartridges be offered the shooter within the next few years from a pound to a pound and a half lighter. The recoil to this little gun is so slight as to be hardly worth mentioning—a thing to be considered, and which will carry weight with many a man when selecting an arm for game, from deer down to woodchuck.

The 20-inch barrel, very light weight, with a beautiful taper, is finished at muzzle similar to most carbines, rounded and countersunk, this feature being a valuable one, as it lessens the chances of injury to that part of the barrel and not much of a dent at that vital part is necessary to cause the most erratic shooting. The groove diameter of the barrel is .226 inch; diameter of bullet, .228 inch and depth of rifling, .003, while the twist is one turn in 12 inches.

The rifle as now being made is of the well-known Savage take-down pattern, a few seconds only being required to take down or assemble. This feature is a great convenience for tourists and others, while it offers the user advantages of inspecting and cleaning from the breech—a feature called for by many. In the course of time this caliber will be offered in solid frame and regular weight and length models.

The powder charge for the cartridge is 25 grains Lightning, while the bullet, which is of the Spitzer type and soft-pointed, weighs 70 grains, and, when beginning its journey, is going some 2,800 ft.-secs., about twice the pace of some of the most popular big-game cartridges using black powder. Rambling along at this speed and giving 1,206 ft-lbs. of energy, one can well imagine what will happen when it comes to a sudden stop in an animal, especially when it is kept in mind that this bullet goes to small fragments when striking nearly anything. The penetration, as given by the makers, in soft pine, shot into endwise, is 7¾ inches, and will penetrate cleanly steel boiler plate ⅜ inch thick. Shooting into end of jack-pine blocks, I found the penetration to be about 7 inches. Into end of hardest and dryest red fir I could find from 3½ to 4½ inches, though when shooting into common fir, partly seasoned, the penetration was about 6 inches—this into end of blocks—while in blocks across the grain from 5 to 6 inches was the average penetration given. When shooting into dry timber, smoke, or at least something very much resembling smoke, could always be plainly seen issuing from the bullet hole immediately following the shot. The hole made in wood was usually a very irregular one, caused, no doubt, by the bullet shattering, as they invariably do when striking, seldom a piece of lead or metal patch being found to exceed 5 grains in weight.

I can't see a bullet in flight—some can—but I noticed a peculiar thing when shooting directly from the sun with this .22 high-power Savage. Almost invariably following a shot, and in direct line of sight, but about fifty feet from the firing point, a light puff of something very much resembling smoke appeared dissipating almost instantly. What caused it? I have never seen anything similar when shooting any other arm.

The extremely high velocity of this bullet naturally produces a very flat trajectory, the midrange height of the bullet when fired at 200 yards being 2.6 inches. This will readily be admitted of greatest importance to the hunter who may look for long shots where estimation of distances might lose game through error in calculating same when shooting arms with a higher trajectory. Particularly in coyote and wolf shooting on the prairies can the writer see great value wrapped up in this interesting little shooting iron. There is not a cartridge made that would suit him better for such work.

Will this gun prove better for deer shooting than any other, and will it be universally adopted for game of that size and under? These are questions about similar to many that have been asked since the appearance of this gun; yes, even before it appeared. I expect to use this gun for deer shooting this fall. I think I can get deer with it. Many will, in my opinion, find it the best thing for deer they have ever shot. Others will condemn it, just as they have the .30-30 and other guns for this game, advocating the .405, or at least more powerful guns. Those who anticipate it, or any other gun, for that matter, anchoring a deer or any animal, to the spot, "no matter where hit," will likeley be disappointed. Deer fairly hit, and particularly broadside shots, I should expect to see go down instantly, and stay down. I am not ready to even give my opinion as to what the results would be if quartering shots were the rule, whether the penetration would be sufficient to always reach a vital spot under these conditions would be mere theory without some experience on which to base a statement, though it may be stated, and quite positively, that for the distance actually penetrated by one of these little bullets jogging along at the speed it travels, the mutilation will be enough to satisfy the one in search of a meat-spoiler.

The readers will undoubtedly remember the various articles in Outdoor Life by that well-known big-game hunter, Capt. F. E. Kleinshmidt. One of his favorite big-game rifles, if I remember rightly, was the .30-40 box magazine Winchester, with which he killed much big game in the Far North. On his last Alaskan trip he used a .303 Savage

on both Polar and Kadiak brown bear, as well as on walrus, moose, sea lion and mountain sheep, and has been reported as saying that he believes the .22 high-power Savage would answer all practical purposes as well as the .303. This should be taken as strong evidence of the power and capability of this rifle. This statement was made by the Captain after he had tried out very thoroughly the .22 on the range and saw its penetration in steel boiler plate, preceded by one to the effect that he would not hesitate to use it on both Kadiak brown and Polar bear.

The gun was placed on the market rather late last year to be used very extensively on deer, but on this game, it has been reported, it has given very satisfactory results, while black bear have been killed with it as well. I have also heard of wolves and coyotes having been killed at various ranges with it at distances up to 400 and 500 yards. For prairie shooting where long shots at these animals (and here could also be included antelope) are often to be expected, or in the treeless mountain districts where long shots are also to be expected, the rifle with as high velocity as 2,800 ft-secs., 100 more than the New Springfield, and whose bullet is affected little by wind, and giving the flat trajectory it does, has advantages not to be overlooked by hunters likely to require an arm for such work.

Within a short time there will be adapters on the market which will permit the use of the .22 long rifle cartridge in this rifle for cheap shooting at target and small game. These are said to be giving excellent results. Besides this, the Marlin Co., successors to the Ideal Co., are working on a gas-check, mid-range bullet for the .22 high-power cartridge with which they expect to obtain from 2,000 to 2,100 ft.secs., which should answer admirably for ordinary hunting and target use. The Ideal Tool No. 3, double-adjustable chamber will be required for this cartridge and as any of the powder charges for the .22-15-60 Stevens cartridge are quite as well adapted to the .22 special high-power, the diameter of the bore and twist of rifling being the same in each, there will be a large variety of reduced loads for the experimental shooter for various purposes.

As to accuracy we can take Mr. Newton's word for it that it is all right, he stating that it is good for a 4-inch group at 200 yards. Twenty-three bulls have been made with it at 500 yards on the military target with metallic sights, while under favorable conditions it is claimed it will do good work on the military target up to 1,000 yards. My own experience for accuracy has all been on either windy or very hot days, and with open sights such as I use for hunting purposes. I doubt very much whether the wind affects the shooting of this rifle at ordinary ranges, but on a hot day, and particularly when the gun barrel gets hot enough to cause heat to rise to interfere with one's seeing and clearly defining the front sight, and the barrel of this .22 heats pretty badly after a few shots, even average accuracy cannot always be expected, especially when using open sights.

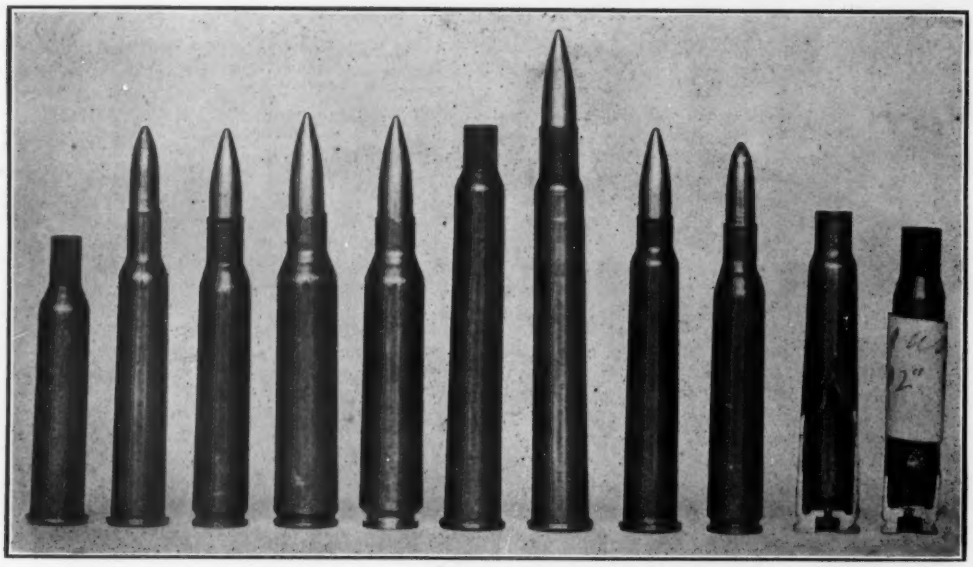
Under above conditions, shooting from rest with the open sights at 200 yards I made one 7¼, one 8¼ and one 8¾-inch group. These were ten-shot groups and were the smallest I made at 200 yards. At 100 yards I fired three ten-shot strings under above conditions, and eliminating one hang-fire (these were the experimental cartridges, and out of 200 I had two of these) the groups—ten shots—measured 2½, 3¼ and 3¼ inches, all measurements taken from center of holes fartherest apart. Counting in the hang-fire, this group would be 4¼ inches. The wind was quite high when firing these hundred-yard groups. Curious to see what the result would likely be if bullets became mutilated, as might likely occur if not handled by the hunter with reasonable care, five were deformed at the points as badly as one ever sees in soft-point cartridges repeatedly worked through a tubular magazine rifle, and another five the points were purposely bent to one side, loaded into the magazine and fired. These at 200 yards made a 13-inch group, while the first five at same distance required a circle exactly 8¾ inches in diameter to hold all five shots. I think it would be quite interesting should some one having one of these rifles which is sighted with telescope sights, fire a few ten-shot strings at 200 yards and give us the results, using perfect cartridges, of course.

As stated before, I intend trying this rifle on deer this fall (pity the bear should one cross my trail with the little terror in my possession) as well as several other rifles, among them being several Winchesters and the new Remington high-power trombone, soon to be placed on the market.

Modern Hunting Rifles

By Chas. Newton.

The title looks ominous. Likewise uninteresting. We have been surfeited with descriptions of the most modern and up-to-date actions, barrels, cartridges, bullets, etc., until we are beginning to get "gunshy" when such a heading appears. In fact, it would seem something like a good long rest, after a hard day, if many months could elapse



PHOTOGRAPH AND DESCRIPTIONS OF SOME OF THE SHELLS.

Number 1 (reading from left to right), shows a .22 caliber shell made by necking down the Krag shell, and to be loaded with .22 caliber high power Savage bullet, velocity 3,300 feet per second.

Number 2 shows the .25 caliber cartridge made by necking down the .405 Winchester shell and loaded with 117 grain soft point Spitzer bullet.

Number 3 shows 7 millimeter cartridge made by necking down the New Springfield service shell and loaded with 139 grain Spitzer bullet.

Number 4 shows .30 caliber shell for use in rifles adapted to a cartridge having a flanged head and giving with the service bullet a velocity of 3,300 feet per second.

Number 5 shows a similar cartridge for use in those .30 caliber rifles which are adapted to use the headless shells.

Number 6 shows the shell of a .25 caliber experimental cartridge made by necking the .40-90 down to .25 caliber.

Number 7 shows a .30 caliber cartridge made by necking the .40-90 shell down to .30 caliber and loaded with the service bullet, and having the same ballistics as Numbers 4 and 5.

Number 8 shows a 7 millimeter cartridge made by necking the .405 Winchester shell down to 7 millimeter size and loaded with the 139 grain Spitzer bullet, being a companion cartridge to Number 3.

Number 9 shows a .25 caliber cartridge, a companion cartridge to Number 2, but with the shell made by necking down the Springfield service shell to .25 caliber and loaded with a 117 grain sharp point Spitzer bullet. This is adapted to use in repeaters intended for headless shells, whereas Number 2 is adapted to use in those repeaters intended for shells having a flanged head. The ballistic qualities are the same.

Number 10 shows the shell for the Ross cartridge, sectioned to show the construction.

Number 11 represents the New Springfield shell similarly sectioned.

before the respective merits of our modern arms and ammunition could be again paraded before us.

It is easy to read carefully the description of the latest thing out, check it up with the trajectory tables, examine its vital organs, and tell all about it; what it will do, what it will not do, what it has done, etc. All interesting work does not involve wet feet, or the expenditure of much coin of the realm or gray matter of the individual. In fact, translating an English gun catalogue is a very pleasant task, if it pays well enough.

But what about the gun of five years hence? Who will describe this? Guess work may be easy, but work with a solid basis requires something more than a stack of gun catalogues, a pile of ordnance reports, and a pair of long, sharp scissors. It requires not only an appreciation of the conditions existing, but of those to be demanded in the future, and how they shall be met.

The present and ever-growing scarcity of game, with the ever-increasing army of hunters, makes the shots farther apart than they used to be. One cannot shoot, and miss or wound, to get away, then go on and get another shot, as easily as he once could. One of our greatest military shots and big game hunters, spent six weeks last fall in a "big game section," equipped with the latest, most up-to-date batteries, and had not a single shot at big game. Therefore it becomes more and more important that, when a shot is offered, the weapon at hand will not only hit but kill cleanly and quickly. There may not be another shot

that trip. This condition sharpens the inquiry into the features of trajectory, and killing power at the end of the trajectory. The demand for more deadly rifles is constantly growing, and this is equivalent to more powerful rifles, not only at the muzzle, but over sporting ranges, which are constantly growing longer, particularly in mountainous regions; while even in the Canadian, Maine or Adirondack forests one is more prone than ever to make a try across a lake or valley, rather than take the chances of a stalk. Thus the matter of velocity, and sustained velocity at that, continually grows in importance.

Once we all stood agape at the possibilities of the terrific velocity of the Krag, .303 British, .30-30, .33 W. C. F., and similar cartridges, which so completely eclipsed the best of the "old reliable" black powder cartridges. The war of the calibers waged long and hot, but when the dust cleared away the new type was seen to have come to stay, due to their superior trajectory, as an aid to hitting, and their superior power, as an aid to killing. But not the least of their advantages was their ability to deliver a terrific blow without developing a distressing recoil. A powerful blow from a bullet usually involves a powerful backward thrust on the shoulder, the one being usually somewhat in proportion to the other, but the new small bores avoided part of this.

Now those high power cartridges, whose action we watched with such awe, are themselves in the has-been class. The old hardshell who, in the opening years of the present century, loved and scrapped for his .45-70 and .45-90, is now equally busy extolling the virtues of the Krag, as against the more modern weapons. In America the New Springfield has set the pace for speed, it surpassing the Krag as much as the latter surpassed the black powder arms. The cartridge was almost immediately grasped by the sportsmen, and it made good, and is still in the height of its popularity; but it is doomed. It is no longer alone by itself in speed and efficiency. The ordinary 7mm, and 8mm shells are now loaded to give 2,985 and 2,850 f. s. velocity, respectively, and the Krag can be loaded almost as highly. They are simply putting up the pressures. Fifteen years ago we thought 40,000 pounds per square inch was terribly high. Now 50,000 is a standard pressure. But all these cartridges, or rather bullets, for the velocities are obtained by the use of comparatively light, sharp pointed bullets, do not hold their velocity as well as they might, although for sporting distances they are more effective than the older type. The bullets used in the New Springfield and 8mm. high velocity cartridges above mentioned weigh but 150 grains; that for the 7mm. weighs 139 grains, and one of the copper tube .280 Ross bullets, pulled from one of their latest output of cartridges, shells made by the U. S. Cartridge Company, and powder by the Duponts, weighed exactly 142½ grains. These cartridges mark the present development of sporting ammunition, as it can be clipped from the catalogues.

However, the call for more power is growing, but the call for more recoil is not, and the cartridge of the future must furnish the power, without the recoil being proportionately increased. Many admirers of the New Springfield rifle have a wholesome respect for its rearward movement, even while they love it. How shall it be met?

When the writer brought out the first high power .22 caliber cartridge, over six years ago, and described it through these columns and elsewhere, it was received with a smile of incredulity. A few bit at it, but the mass were skeptical. Now, with the new Savage featherweight rifle using it, and in the hands of hundreds of sportsmen, it is conceded by everyone that the power obtained from this shell is far in excess of what the recoil would indicate. It strikes a blow like the .40-82, but the recoil is like the .32-20. But while this is a splendid rifle for game up to and including deer, the big game hunted wants a more powerful arm. He wants one of the energy and the velocity of the New Springfield, but with less recoil. He can get it.

The same principles which give a maximum of power with a minimum of recoil in the .22 Savage high-power, will do the same with the larger calibers. The writer, believing this, developed a cartridge three years ago, and improved it last year, for this purpose.

The caliber is .25 and the bullet used either the regular .26-35-117 or the .25-20-86, both metal cased soft nose, and swaged into the form of a spitzer. The first shell used was the 6mm. Navy shell, expanded (and a few months later the Krag shell reduced (at the neck until it would take a .25 caliber bullet, and loaded with a suitable charge of high pressure smokeless powder. This gave, with the 86 grain bullet and 37 grains 1908 military powder, 2,775 foot seconds instrumental velocity; about 2,850 f. s. actual muzzle velocity. Thirty-four grains of the same powder gave the 117-grain bullet 2,450 f. s. instrumental, or about 2,525 f. s. actual muzzle velocity.

But this shell is out of date. Its power is about that of the 6mm. Navy cartridge. It does not rank with the Springfield. So last spring we made another.

We took the .405 Winchester shell and necked it down to .25 caliber and inserted a 117-grain bullet, having previously taken the precaution of filling the air space in the shell with 43 grains Lightning powder. The result was an instrumental velocity of 2,964 feet per second, equal to about 3,100 feet per second actual muzzle velocity. This

estimate of muzzle velocity (the instrumental velocity having been taken by chronograph by one of our largest cartridge companies) is based upon figures given by the Ross Rifle Company for their cartridge. They state the instrumental velocity of a 140-grain bullet as 2,890 f. s., with the actual muzzle velocity as 3,047 f. s. A difference of 157 f. s. Add this difference to my 2,964 f. s. instrumental velocity and we have 3,127 f. s. actual muzzle velocity; but call it 3,100 flat.

This velocity means that, with the sharp pointed, soft nose spitzer bullets. made by a rifleman here in Buffalo, from the regular factory bullets, with the rifle sighted at 200 yards, the midrange height of the trajectory is less than 2½ inches. Sighted at 300 yards it is about 6 inches—which would not shoot over a deer if held dead on and he were at the midrange point.

Again, this means that this bullet has an energy at the muzzle of 2,500 foot pounds, or slightly more than the Springfield at its muzzle. The greater velocity of this bullet will cause it to lose a little more velocity over the first few hundred yards, than does the Springfield, but this is about counterbalanced by the greater sectional density of the bullet. A .25 caliber bullet weighing 104 grains has the same sectional density as the .30 caliber Springfield 150-grain bullet, and this bullet weighs 117 grains, and a 115-grain bullet gives the same sectional density, and consequent carrying power, as the Ross. Therefore, this little .25 caliber bullet is, at all sporting ranges, practically the exact equal of the Springfield service bullet for power, while its greater speed at all ranges insures its mushrooming better.

Almost an exact duplicate of this cartridge is made by necking the New Springfield shell down to .25 caliber at the muzble and loading with the same charge. There is no appreciable difference in the powder capacity. But there are no rifles made for this cartridge.

Not so fast, my friends. There are none regularly manufactured; "not yet, but soon." Any of our true high-power rifles can be made to do the stunt easily and cheaply. It is not necessary to pay $70 for a Canadian rifle "hover 'ome" and 35 per cent ad valorem at the border, to shoot a good rifle. Just get your Model 1895 Winchester, your New Springfield, your Remington-Lee high-power, your Krag, your Mauser or your Mannlicher; unscrew the barrel, have a .25 caliber barrel fitted, chamber it to take either of these shells, according to whether your bolthead is for a flanged head or a rimless shell, and you have it. Fred Adolph of Genoa, New York, will do the whole job for $15, and you have an up-to-date gun; and, while you may have to reload your own cartridges for a year or two, unless you want to send to B. F. Reed of Buffalo, New York, who will do it for you, and at the price of New Springfield cartridges at that, you do not have to pay ten cents per cartridge every time you shoot, and no bullets sold for reloading. Any rifle using the Krag, New Springfield, Mauser, .303 British, or other similar cartridges can be used, and these shells will work through the magazine correctly. For those rifles intended for the flanged-head cartridges, use the .405 shells; for those intended for the rimless cartridges, use the New Springfield. One is as good as the other. Mr. Reed will make the shells, swage the bullets into spitzer form, and sell the loaded cartridges, if you wish; but you can reload yourself, with good American powder and bullets, in good American shells, at no more cost than for an ordinary military cartridge. In fact, it can be done for less, as the sharp-pointed bullets cost but $1 per hundred, while the military bullets cost, if bought from dealers, $1.35 per hundred.

But we find that we have left out about the recoil; same as it was left out of the gun. This charge was finally worked up in a Stevens No. 44½ single shot rifle. Weight 7¼ pounds. The recoil is just about the same as that of a .30-30, Savage .303, or .32 Winchester Special, in the Savage, Winchester or Marlin repeaters. Therefore, this rifle can be made much lighter than can one taking a larger caliber bullet, have as much power, and yet be fired without discomfort. New Springfield efficiency, with .30-30 weight and recoil, looks like a tempting proposition on an all-day tramp, provided we can get the rifle bullet that light. A .25 caliber barrel in a lightweight Mauser, as furnished by Adolph, or a sporting model Remington-Lee high-power, will do the trick, and maybe the Winchester Company might be induced to put out their Model 1895 rifle, in a featherweight model, if called for hard enough.

This reduction in recoil may look strange to some of the skeptical ones who are absolutely certain that action and reaction are equal, but the same conditions which obtain, and which give such a reduction in recoil, in the .22 Savage high-power, are here likewise and have the same effect. The writer's explanation which, however, may be erroneous, is that the smaller caliber is responsible for the reduction in recoil, in proportion to the energy developed. We may consider the bullet in the barrel, as it starts for daylight, to represent the action of a gas engine piston, with conditions reversed. The piston is rushing outward against the atmosphere, which represents the gas. Air has considerable inertia. The impact of the bullet against the air, as it rushes out, causes a reaction in the arm. As the larger the area of the piston head in the gas engine, the more power developed by a certain

pressure of gas, so the larger the area of cross section of the bullet impinging upon the atmosphere, the greater the reaction derived from such impact. This seems to be corroborated by the less recoil given by sharp pointed bullets. The original Model 1903 cartridge for the Springfield developed 4 per cent more energy than the Model 1906, yet it developed 20 per cent more recoil.

But, whatever the cause of the proportionately less recoil, as compared to the energy developed of the smaller calibers, it is less in the .22 Savage high-power and it is less in the .25 caliber above described. The proof of the pudding is in the eating thereof; try it and see.

(Note.—The next number of Outdoor Life will contain an article by Mr. Newton describing other cartridges built upon the same principle as the ones described above. This article will prove of exceptional interest to all big game hunters who see in the rifle of the future velocities exceeding 3,000 f. s., extremely flat trajectory, great energy and the consequent great killing power. Wait for Mr. Newton's concluding article in which he covers the subject thoroughly.—Editor.)

Gas Pressures and Pressure Guns

By Edward C. Crossman.

On page 85 of the July issue of Outdoor Life appears an "explanation" by Mr. Charles Newton for having stated in a past article that the Model 1895 Winchester rifle had proved its strength because it had stood for years the pressures of the .35 and the .405 cartridges, developing fifty thousand pounds per square inch.

Mr. Newton's explanation brings up the question of the method of taking powder pressures and thinking that such question, more elaborated, might be of interest to the readers of Outdoor Life, I am tempted to go into the matter a bit farther

Mr Newton's article may be divided into these sub-heads:

First, the admission that he overstated the pressure of the .35 cartridge by 4,000 pounds, such overstatement being due to his poor memory. We here find the refreshing example of the vast difference in people—according to the ideas of the people themselves. We find, according to past article by Mr. Newton, that if a bolt man is even suspected of misstating a fact, that he is a member of the Ananias Club without further ado or investigation to see whether he even made the error, to say nothing of the reasons for said error. Having made this clear, let us proceed.

We find, second, that a pressure gun—not one form of pressure gun—kindly mark the difference—consists of a barrel fitted with the ordinary side crusher system, familiar to those who are in the least interested in ballistics, and too completely described by Mr. Newton to need repetition here.

Third, we find that inasmuch as one system of taking pressures—this side crusher system—requires that it be fitted to one barrel of stated caliber, and naturally not adapted to cartridges other than those for that gun—it would be impossible in any form of pressure gun to take the pressures of various cartridges, and that Mr. Crossman presumably lied deliberately as to having had pressure made in the same gun, both of the Springfield and the .35 Winchester cartridge. We will examine into this further.

Fourth, we find the usual gentlemanly language on the part of Mr. Newton, stating that inasmuch as he, in his lack of ballistic knowledge, never heard of any but the side crusher system, Mr. Crossman took the pressure on his typewriter and the test was merely of hot air.

Fifth, we find a peroration of one column pleading for accuracy of statement and courtesy of language in sporting magazines, to which I heartily subscribe, suggesting that it extend in courtesy to addressing your opponent's statements as hot air and him by a nickname, and extend, in fact, to the avoidence of misstating pressure figures and the systems of taking pressures.

There are two morals to be drawn from Mr. Newton's "explanation," that it pays to observe the ordinary courtesies of life lest you be mistaken and have to apologize both for the error and the lack of courtesy, and that a little knowledge is a dangerous thing.

Let us quote Mr. Newton in his peroration:

"But when he deals with matters of fact and deliberately and intentionally makes false statements as to matters of fact concerning which the ordinary public has no knowledge, then the only method of dealing with the question is to either let them pass unchallenged and be accepted as truth by man, or to challenge the truthfulness of the author."

"I take that this is a universal statement and applies entirely to pressure figures and statements as to methods of taking pressures, as well as to other things. This is my excuse for looking into Mr. Newton's article.

". . . A desire that all might see at a glance the absolute impossibility of testing more than one size cartridge in any one

gun." . . . "What kind of a gun could it be which would show the pressures of both .35 Winchester center fire and the Springfield."

"But as a matter of fact the only gun which anyone else ever used and which will show the pressure of two as different cartridges as those above mentioned possesses a large number of keys, is inspired by hot air and makes a noise like a typewriter." Quotations from Mr. Newton's courteous explanation as to his overstating pressures to bolster up a rifle that he was supporting.

I believe I have stated before that a little knowledge is a dangerous thing, whether it is as to the royalties that we pay to a foreign government for the use of the Mauser patent, or as to the systems of taking pressures.

I do not care to bandy words with a person whose courtesy extends only to his perorations, but fails to percolate through the main body of his articles.

We find the query as to what sort of a pressure gun is able to take the pressures of the .35 and the Springfield cartridges—the sort that was used in making tests I quoted. For the sake of the improvement of Mr. Newton's ballistic education, I shall describe the apparatus, hoping that I do not bore the many readers of Outdoor Life who must be familiar with the oil-case system. It is not functioned by keys, does not make a noise like a typewriter and is not inspired by hot air.

It is one of the oldest forms of pressure-taking apparatus extant, described in standard books on ballistics, and used in the arsenals of England, exclusively, in the factory of Eley Bros., of Kynoch, of Kings-Norton, in the ordnance department of Canada and in the Ross rifle factory, where they turn out rifles that are winning world's championships this summer at the great shoots abroad.

Not being acquainted with all the world's factories, I am unable to give the full list of those using this good old oil-case system. It is so universal that there is absolutely no excuse for a person writing on rifles and cartridges for the public press to be ignorant of it, to say nothing of descending into personalities and slurs because his little knowledge failed to inform him of such a system.

I quote from page 205 of the British Text Book of Small Arms for 1909, a very useful work for the beginner in ballistics and one to which I call Mr. Newton's attention as telling of things of which he is apparently ignorant.

"The arrangements for taking pressure with small-arm ammunition are generally as follows:

"A very strong barrel, called a pressure barrel (see illustration) is provided with a breech arrangement on the wedge principle; the cartridge having previously been dipped from the base up to the neck in Rangoon oil, is placed in the chamber, its base resting against a hollow piston containing the copper, and the whole kept in position by circular wedges, screwed up from the rear by means of a screwed plug containing the firing arrangements. The striker passes through the screwed plug, wedges, piston and copper, and so is free to move forward onto the cap; on firing the oiled case is forced back on to the piston, thus compressing the copper, which is taken out and measured. The pressure in tons per square inch is then read off the table."

From a letter from Eley Bros., probably the largest makers of ammunition in the world, I quote the following, under date of January 11, 1911:

"There are several different methods in use for the measurement of the pressures developed in rifles on firing, and the figures obtained vary considerably and show no satisfactory general relation between each other, due not only to the differences in the methods, but also to the use of copper crushers of varying sizes and hardness. Our pressures are measured in an instrument of the Woolwich pattern, into which barrels of different calibers can be screwed, and we therefore measure the "back pressure," or the pressure exerted between the faces of the cartridge-head and the breech-bolt, when the cartridge case is well oiled to prevent friction between its walls and those of the rifle chamber."

I hardly think further comment is necessary.

The chief advantage of the oil-case system, aside from its avoidance of the false pressures and the piston momentum, unavoidable with the side piston system, is that it enables pressures to be taken with any barrel and any cartridge by the simple process of turning a collar to fit the barrel as it comes from the receiver of the rifle. These collars cost about $4 each to make.

The British Text Book recommends the use of a "strong barrel" natural when high pressures are to be taken, but when the pressures of the normal loaded cartridge are desired, the standard barrel may be turned out of the rifle receiver, screwed into a collar and then screwed into the pressure gun.

Inasmuch as I seem to be dealing with a person whose chief arguments consist in charges of prevaricating as applied to his opponents, I am sending to the editor my copy of the British text book, the Eley letter and one of the copper crushers used in this system. I believe this will close the matter so far as Mr. Newton is concerned.

The pressures of the .35-caliber cartridge were taken under my personal inspection in January of this year, while I stopped off at the Ross factory on my return from a caribou hunt in Canada. I had them made in order to refute a statement Mr. Newton

even then attempted to have printed as to this .35 cartridge developing 50,000 pounds, and which statement I was privileged to see in carbon copy form while in the East.

The Springfield barrel, screwed into the pressure gun, showed pressures about 1,500 pounds lower than those obtained by the Frankford Arsenal. I wrote the Frankford people as to the variance and they replied that the oil-case system—with which kindly note they were entirely familiar—gave pressures slightly lower than the side piston system, which they and other American manufacturers use.

Therefore, desiring to be entirely fair and to be entirely within the facts—instead of 4,000 pounds outside of the utmost limit—I ran up the pressures we obtained by over 2,000 pounds, stating the pressure of the .35 to be about 42,000 when the pressure gun showed it to be under 40,000 pounds and Mr. Newton to be in error by 10,000 pounds, or 25 per cent shy of the truth.

To make these tests we merely screwed a .35-caliber barrel—one of the standard calibers of the Ross Co.—into a collar and inserted this into the pressure gun. Behind the oiled cartridge, one of the Winchester factory's own make, we inserted one of the standard copper crushers and then breeched up the gun and fired it.

What is more, such a machine can be built for around $100 and any barrel and cartridge whatever can be tested in it, the only trouble being that the barrel must be unscrewed from the rifle and screwed into a fitted collar, which screws in turn into the pressure gun. With collars fitted, the pressures of twenty-five different cartridges could be taken in a few hours in the same pressure gun.

Taking it for granted that when a man is certain enough of his ground to descend into insinuations as to untruthfulness of another, he is certain enough to back his opinions with coin of the realm, I hereby offer to bet Mr. Newton $50 that the pressures of the .35 Winchester center-fire cartridge and of the Springfield were taken precisely as stated and that they are entirely correct so far as the oil-case system goes, which in turn shows the Springfield pressures to be about 1,500 pounds lower. The proof to be such that will pass satisfactorily before the editor of this magazine.

Taking the pressures given in general, I take the liberty of doubting the correctness of the Winchester figures, in spite of the size of their plant, etc.

My reasons are, that there is no such variance in the pressures of the oil-case and the side-piston system as the Winchester figures would seem to show, nearly 7,000 pounds, or about 18 per cent. Second, the letter of the Union Metallic Cartridge Company, written by one of the foremost ballistic engineers we have, Mr. W. M. Thomas, who is not likely to miss the pressures of a cartridge that he has been making by any 6,000 pounds.

I am asking the editor to print this here.

THE REMINGTON LETTER.

Bridgeport, Conn., April 4, 1912.

Mr. Edward C. Crossman, Los Angeles, Cal.:

Dear Sir—Replying to your letter of the 29th ult., we are unable to give you the exact chamber pressure of the .35 and .405 Winchester cartridge. We load our ammunition with the same class of powder as the W. R. A. Company load theirs and endeavor to obtain the same ballistic qualities.

The .35-caliber with 250-grain bullet, giving 2,200 feet muzzle velocity, should not exceed 40,000 pounds pressure. The .405-caliber with 300-grain bullet, giving 2,204 feet, should not exceed 45,000 pounds. This is the only load that we know of with which the latter cartridge has been put up.

REMINGTON ARMS-UNION METALLIC CARTRIDGE CO.,

By W. M. THOMAS,
Ballistic Engineer.

Third, the variance between the Winchester figures and those of the Frankford Arsenal: Mr. Newton says that the Red W folks quote the pressure of the 1903 Springfield cartridge as 50,000 pounds. The 1903 Springfield cartridge is the one loaded with 220-grain blunt bullet to give 2,200 ft.-secs. and the pressures given in the handbook of this rifle are 44,000 pounds, not 50,000.

Again, such a cartridge as the .405, giving 50,000 would be a ballistic botch and I doubt its being one.

Calculation shows the density of the .405 bullet to be 2,250 grains per square inch, by density meaning its weight as proportioned to its diameter.

The .35 is 2,550 grains per square inch.

The .220-grain, .30-caliber Krag and 1903 Springfield bullet has a density of 2,950 grains. At a velocity of 2,000 ft.-secs. the Krag gives a trifle below 40,000 pounds pressure. When the same bullet was driven at 2,200 ft.-secs. in first Springfield, the pressures rose to 44,000 pounds.

Yet we are told that a bullet of considerably less density at the same speed of 2,200 ft.-secs. gives, in the case of the .405, 50,000 pounds, and in the case of the .35 cartridge, 46,000 pounds. The general public may decide as to whether the oil-case figures, backed by the U. M. C. letter are correct, or whether it prefers to take those of the W. R. A. Co., which we succeeded, by the oil-case system, into shaving down 4,000 pounds from Mr. Newton's first figures—"quoted from memory."

Mr. Newton is hereby adjured to read over his peroration in the July issue of Outdoor Life and to decide whether or not charity begins at home.

New York's Anti-Pistol-Carrying Law

Some eleven months or more have passed since State Senator Sullivan's anti-pistol law became operative in New York, and every month that is added to the term seems to increase the ludicrous features of this farcical act. Many New York officials denounce the law as a vicious legal absurdity.

The New York Times recently made a canvass of prominent New York City officials and published the verdict of these men on this law. We print below extracts from the issue containing the story:

"One city official who believes that the Sullivan anti-pistol law is a farce, and a much less efficient safeguard than the original pistol law whose place it took, is Magistrate Joseph E. Corrigan.

" 'The new anti-pistol-carrying law is ridiculous,' Magistrate Corrigan said. 'It has changed the crime of carrying a concealed pistol from a misdemeanor, punishable by a maximum sentence of a year in prison, to a felony, punishable by a maximum sentence of seven years. Theoretically this would seem to increase the penalty for pistol carrying. Practically, however, it does just the reverse. To obtain a conviction for a felony is much more difficult than to obtain a conviction for a misdemeanor.

" 'The chances of a gun-carrying crook for getting off are much better now than before the law was passed. Under the old law the pistol carrier was tried speedily and without sentiment by three justices of special sessions, not by a jury. Under the new law the pistol carrier is tried first before the grand jury and then before a petit jury, increasing the chances of appeals for sympathy, expense to the county and all the contingencies of a miscarriage of justice which are recognized as sometimes inevitable in jury cases.

" 'These taxicab robbers recently haven't been deterred from carrying pistols by the new law. The gunmen who recently shot up the Fourteenth street jewelry establishment and the Broadway gambling house weren't frightened by it. You can hardly pick up a paper nowadays without reading of a shooting scrape. I don't believe the police are even trying to enforce the law.' "

The Maxim Silencer on the .22 Rifle

Editor Outdoor Life:—I notice Brother Lass of Colorado asks about the Maxim Silencer in your June number. I have had quite a lot of experience with the .22 caliber and also the high-power .30 caliber Maxim Silencers and possibly my experience might interest him.

I use a .22-caliber Winchester Automatic rifle with a silencer very successfully on muskrat, skunk, rabbit, squirrel and also duck shooting. I prefer a high-power gun for woodchucks, but have also used a .22 upon them. I have found the silencer to give me much advantage and also much more enjoyment. It is absolutely accurate as far as I can see; that is, it does not hurt the shooting of the gun. If you will look at one you will see that it cannot injure the shooting, because the bore of the silencer is much larger than the bore of the gun and

the bullet cannot touch in passing through the silencer unless the latter is very badly out of line indeed.

I can demonstrate the value of the silencer in duck shooting in a way that some people decline to believe. It is strict fact, however, and therefore I do not hesitate to write about it. I was duck shooting on a fresh-water pond early in the morning, and some ducks came down out of shotgun range. I picked up my .22 rifle with the silencer on it and put a shot out in the water beyond the ducks. The noise of the shot disturbed the ducks and they swam away from it coming directly towards me. Once in a while I would shoot again until I actually brought them all up where I could reach them with a shotgun. When I had them where I wanted them, I got one with one barrel and another with the other barrel. I have since done this same thing several times. I also find the silencer a great help on a .22 in killing crippled ducks which are out of range of the shotgun.

I believe the Maxim Silencer is a fine thing and would not take $50 for mine if I could not get another one like it.

R. L. PARKER.

Organizing a Gun Club

VIII.

Ammunition.

The matter that should appear under this head can very properly be divided into three sub-heads, with a further sub-division of the matter to appear under the third sub-head.

The sub-heads are:

(a) The shells.
(b) The powder.
(c) Proper loads of (I) powder, (II) shot.

The Shells.

Let us consider (a) first: Such wonderful progress has been made in the perfection of ammunition for shotguns during the past few years that it hardly seems possible that there is any room for further improvement in the articles now manufactured and marketed by all the standard loading companies of the United States.

Nothing could be more interesting than a trip through one of the factories of the large cartridge loading companies. An idea would then be gained of the infinite care bestowed by the manufacturers, upon even the smallest detail in connection with the assembling of that article of commerce known to shooters as "a loaded shell." The copper, brass, steel and even the paper itself, are all subjected to a rigid scrutiny both before and after being prepared for the process of assembling. The cartridges themselves, before the primers are placed in them, are again subjected to most careful inspection, and anything approaching abnormality or inferiority is at once discarded. To an ordinary person the inspection seems almost beyond reason, so large is the amount of material rejected for the very slightest imperfection. It is a fact that the waste of raw material so caused in the effort to produce perfection in the finished article, does cut a very serious figure in the cost of putting loaded shells upon the market.

Then take the primer, that small copper cap on which depends so largely the success of the shell and the load in it. Such a delicate little article cannot be manufactured haphazard. It must have just so much of an explosive charge of the right strength, and no more.

Rigid as has been the inspection of the shells up to the time of their being placed in the machine to be loaded, they have still to pass through another examination administered this time by the machine itself, which casts out and rejects as they come to it, shells the imperfections of which were so slight that they escaped even the eagle eyes and experienced fingers of those through whose hands they had previously passed.

Such inspection may seem to some to be entirely too rigid, excessive and altogether unnecessary. It must be remembered, however, that shells are not loaded for trap shooting purposes alone, but for those who go afield where a faulty shell may possibly mean loss of life or injury to limb. To the ordinary trapshooter, too, a faulty shell is a source of serious annoyance, while to the expert, shooting a tight race, the difference between victory and defeat may hinge upon the result of a single load. For all such reasons, therefore, the cartridge loading companies feel that no inspection is too rigorous, if nothing but the best is to be put upon the market.

Is it any wonder, therefore, after the loaded shells have gone through all these many series of inspections, that they do the wonderful record breaking work that makes even the most hardened expert open his eyes and wonder "what next?"

The foregoing gives but a feeble idea of how the difficulties that beset the path of the manufacturers of shells are overcome. It is, however, the best that can be done with the limited space at one's disposal, and it should at least lead the shooter to appreciate a little more than he perhaps has done the excellence of the loaded shells of the present day.

The Powder.

With empty shells brought to such a high state of perfection, it is of course necessary

to load them with the very best powder that can be procured, if the finished article is to give best results. The cartridge loading companies always test very carefully the powder they intend to load so as to make sure as far as possible that it is O. K.

Pattern.

The term "pattern" is used to denote the spread of the load of shot, that is, the number of pellets of shot that hit the mark fired at, and the manner in which they are grouped together.

At the factories where guns, loads, etc., are tested, patterns are made either on a sheet of Manila paper or on a whitewashed steel plate with a 30-inch circle, the target being located forty yards from the muzzle of the gun. As it is a hard matter for an individual to continually hold a gun true to the mark, shooting off-hand, the best way for him to ascertain whether his gun is giving him a good pattern, i. e., spreading the shot around an imaginary central point nicely and evenly, is to take several large sheets of paper, stick them up against a fence or side of a barn, and fire a load at each one of them without selecting any particular spot to aim at. Always make sure there is no one on the other side of the fence or barn, and thus avoid the possible danger of injuring or killing any human being or animal. If a series of shots fired as above shows that there is an even spread around a central point, you can be pretty well satisfied that your gun and load are making a good pattern. If on the other hand, the pattern is patchy, that is, has bunches of shot grouped together, with open spaces between them large enough to let a target through without more than a pellet or two at the most hitting it; and if your gun and the same load continue to make such patterns, then the load does not suit the gun and you had better try another.

EDWARD BANKS.

(To Be Continued.)

The Effect of Small Bore Rifles on Game

By Lieut. Seeley A. Wallen.

I received some time ago the inquiry referred to me for answers as to how cleaning a rifle from the muzzle effects the accuracy of the arm. This inquiry was made by a gentleman who had read a statement of mine in a previous number to the effect that the Winchester 1890 model repeater handling .22 W. R. F. cartridges was an excellent gun when new, but that, as it could not be cleaned from the breach, it soon lost accuracy to some slight degree. It appears from his letter that he has taken the foregoing statement to mean that cleaning a rifle from the breach impaired its accuracy —a theory which, if we presuppose the use of a suitable rod, I should not care to advance. Also it should be noted in this connection that a rifleman using the arm in question stated in your magazine that it could be cleaned from the breach by opening the action and using a light and flexible brass rod. This was news to me, but if correct as I do not doubt it is, it removes the only objection I can perceive to this admirable little arm.

I do not know whether sportsmen in general hold the same opinion, but military shots condemn cleaning from the muzzle so universally that it is, or was at least, considered an infraction of discipline in many commands to clean a gun in this manner. Any enlargement of the bore at the muzzle, particularly if it be of an irregular character, is very harmful to the accuracy of a rifle, especially at the longer ranges. This has been proven so often and so conclusively by experts that it hardly admits of question. Rifles damaged in this manner are referred to as "bell muzzled," I believe, and are considered utterly unfit for good work at long ranges.

Now, in cleaning from the muzzle a man will hold a gun in a certain position nearly always. He finds that particular position most convenient and consequently forms the habit, perhaps unconsciously, of placing it in that manner. The rod in being forced back and forth through the gun bends somewhat and this results in its being continuously dragged with considerable pressure across certain parts of the inner surface of the muzzle. You know the old saying that "water wears away the rock," well, even soft brass will ultimately wear the steel of the barrel when applied constantly in this manner. This is how the damage is done—at least so far as I understand it. I certainly do not profess to be an authority on such matters and what confidence I feel in advancing this theory results more from my knowledge of the experience and opinions of many of the best riflemen in our army than from the results of my own little experience. I have "bell muzzled" two rifles on my own hook and at my own expense in this manner—both 1890 model Winchesters —but I have never owned any other guns that I did not know could be cleaned from the breach and consequently had no further need to experiment in this way. With the first of these two guns (very ancient history in my shooting experience) I was sufficiently unsophisticated to use the rod furnished with the gun and the resulting irregular enlargement of the muzzle was no great while in reaching such proportions

that it could be readily observed with the naked eye. With the second, greater care and the best rods money could buy "put the evil day afar off" and when I finally gave up the gun as inaccurate no damage to the muzzle could be detected. I concluded that it existed, however, (in default of scientific measurements) from the fact that the best groups I could get from a muzzle rest were over four times as large as those secured under identical conditions when the gun was new.

If I were to do anything so rash as to advise readers about the selection of a rifle, I should certainly suggest that they assure themselves that the gun they are thinking of purchasing can be cleaned from the breach and preferably with ease, since the trend of human nature is such that a man is very likely to fall into bad habits in the use of his tools if their manner of construction invites it. I have in mind that class of sportsmen who clean their guns and who buy them with the idea of using them with some frequency. Where a rifle is never cleaned or where its principal function is to stand peacefully in a gun cabinet the question as to how it could be cleaned naturally loses importance.

I do not know whether this bolt vs. lever question is going to give as many "farewell performances" as some theatrical celebrities have done, but I hope not. For my part, I had as lief hear some of our scientific gentlemen calling each other liars on some other topic. I am not able to see how such a discussion can be of deep interest to the majority of sportsmen—it conserves no game—and if it inculcates principles of true sportsmanship, some of your recent correspondents have not profited thereby. The trouble with our hunting equipment of this day is that it is all too efficient—at least so far as doing hurt and damage to our wild creatures is concerned. I would rather see a little improvement in sportsmanship—or call it common decency if you like—than a great deal of perfection added to repeating and automtaic arms, or to nasty smelling automobiles, either. Far be it from me to insinuate that a man cannot ride in an automobile to the hunting grounds and pack an automatic rifle with him thither without forfeiting his claims to the title of gentleman—or sportsman even, but the man who can view the use of either of these or of any similar devices in the pursuit of game with pleasure or without regret and forebodings seems to me to be either lacking in knowledge and foresight or else to have but little care as to the future of our wild game. The automobile, especially, has resulted in the destruction of game in entire districts and is a greater factor towards the destroying of wild life in regions accessible to its vile trail than any form of gun will ever be. A hog is a hog and would be so were he forced to depend upon a single shot instead of upon the miniature gatling he is generally to be found with, so more harm is done by a machine which conveys him in his filthy numbers to a region otherwise immune from his presence than could possibly be accomplished by furnishing him with deadlier arms.

I have no personal reason for complaint in these matters. The last deer season my old .25-10 Favorite sent its little bullet through the shoulders of a buck with as pretty a head as I have seen in some time, and I could have killed a couple of does besides easily enough had I been so minded. I have had such sport with ducks, quail, and other small game as I desired in addition. My reflections on this matter are general and concern my children more than myself.

I note that the discussion which I hoped to start by my article on small game shooting with the rifle very presently languished. It disappointed me quite a little. Though the article was received with courtesy and some apparent interest, I cannot flatter myself that the iniquitious practice (which I know prevails to an outrageous extent) of using the "greaseless" .22 bullet upon small game received any appreciable setbacks as a result of my remarks. We have plenty of sportsmen who are willing enough to unboundedly condemn anyone who uses the cruel and senseless steel jacketed bullet of ordinary shape upon large game. Do you really think, gentlemen, that the agony of a paunched deer is any more terrible or of more weight in the eyes of "Him who notes the sparrow's fall" than the sufferings of an innocent game bird, uselessly wounded and dying unseen as a result of the ignorant or careless use of such ammunition? I do not think it is.

I have said my say upon this matter though I do not believe that my brother sportsmen have accepted my conclusions as final and there is no reason for them to do so that I am aware of. Still it is a matter that concerns every sportsman who ever employs a .22 to shoot small game with, and it seems to me it more concerns our honor and credit as sportsmen—men who should pursue their recreation intelligently and with a scrupulous avoidance of the infliction of wanton and useless suffering—than does the question of whether a lever or a bolt gun can vomit its streak of death a fraction of a second faster than the other.

Can we not have this question (since it really means something) tried out and proven one way or the other? It is surely simple enough. Let one or more riflemen of an experimental turn of mind take down their pet .22s and purchase a box or two each of cartridges loaded with "greaseless" bullets together with the same quantity of ordinary black powder and lead bullet cartridges of the same kind. If these guns have

not telescopes let them take along a friend armed with good field glasses and fire any given number of both kinds of cartridges at some game birds, say at doves or scaled or California quail or at whatever lawful game is convenient, keeping an accurate record of the number of birds hit and the number of those killed and obtained with each class of cartridge. I would suggest that a record of the average distance shot over would also have some value, as a bird only 10 or 12 paces distant could be effectively killed with the business end of a hatpin as a missile if the same could be discharged with the same accuracy as a .22 bullet. Doves furnish a very conclusive test as to the number of actual hits as their feathers are loosely attached and any wound will dislodge a sufficient number for observation. Then publish the results and make it plain either that I am wonderfully mistaken or that the man who knowingly discharges such a missile as a "greaseless" .22 bullet at small game at any sporting shooting distance (say from 50 to 100 yards) should be in jail instead of at large in a world susceptible to suffering from heartless cruelty.

I found even the regular soft bullets in short, long, and long rifle .22 sizes unsatisfactory in regard to their effectiveness on most small game. They are good enough for rabbits; and, I believe, for ducks, the bullet having more chance to expend some reasonable part of its energy on game of this bulk than what it has on doves, quail, plover, etc. I did not like the .22 long rifle hollow point bullet cartridges which I tried either. These were of U. M. C. make and shot irregularly when fired against the wind.. They also mutilated the birds so that a large proportion were unfit for use, but there was no doubt about their killing when they struck. Some gentlemen stated that the Winchester make of these cartridges, having a smaller hole in the bullet, shot more accurately and mutilated small game less. I have not had an opportunity to test these cartridges, but I should like to and I should think a test of their accuracy and killing power as compared to the regular black powder cartridge would be of interest. The accuracy comparison should be made by shooting both types against a variable wind to be at all conclusive and the killing power test as suggested before.

By far the best cartridge for all small game that I have ever tested out is the .25-10 or .25 Stevens rim fire, as it is called. It is likely to mutilate an occasional bird at ranges less than 25 yards, but usually it does not tear them up much more than the regular long rifle .22, and it is a very reliable killer. In fact, in shooting doves you will comparatively seldom get feathers without getting the bird they belong to, which you will find is very far from the case with the long rifle cartridge. Of course, for some special purposes, such as shooting treed grouse, where the range is so short as to make a miss practically impossible, almost any of the .22 cartridges will do as well as anything, and there may be riflemen who can place a .22 bullet regularly within an inch of the spot selected at unknown ranges around 75 yards under all sorts of wind and light conditions. However that may be, such shooting is certainly beyond the most of us; and, if we wish to conduct ourselves like intelligent beings and keep a good conscience, it seems to me we should make sure that the ammunition we propose to shoot at harmless small game is of such a sort that it is as certain to kill quickly and with a minimum of suffering as possible.

I would like to ask what experience those using the .25-10 U. M. C. Remington single shot cartridge recently have had with it. I am under the impression that they are now making the cartridge about 1-32 of an inch longer from the base to the front of first band on bullet and I am certain that none of my guns will shoot these shells without fouling and leading just in front of the chamber—a difficulty which is caused by some peculiarity about the cartridge, I feel sure. How are the Winchester or the Peters' shells of recent vintage? I used to prefer the U. M. C. .25 as formerly loaded to any other that I had ever used.

Not Yet a "Dead One"

In our July issue our esteemed contributor, Dr. George Van Schaick, referred to Captain Money, the great shooting enthusiast, as "the late Captain Money." Immediately after the publication of that issue we received a letter from our friend, Edward Banks, the heavyweight advertising man of the Du Pont Powder Co., expressing surprise at the statement, and telling us that if Captain Money had passed away he would be one of the very first to hear of it. Mr. Banks further states that Captain Money, to the very best of his knowledge, "is still alive and kicking, and decidedly young for his 74 years of age."

We are sorry the error occurred on both our part in publishing the reference and Dr. Van Schaick's in writing it. We know the good doctor's apology may be considered joined with ours herewith. We don't like to bury all the good ones in this manner before their time, especially in view of the fact that so few of the "dead ones" apparently ever get buried; so are pleased to know of Captain Money's presence yet among the real live ones. May his continued sojourn with us be a long and pleasant one.

A Saddle-Bag and Holster Combined

The man going on a packing trip in the mountains for big game almost invariably takes with him a duffle, or "war bag." This may be a made-to-order canvas sack, with

The saddle-bag and holster in position on saddle, gun and stock ready to be drawn.

patent locks on the end, or it may be a common 25-cent seamless sack tied at the end with a string (I have found the latter, in ordinary cases, plenty good enough). There are, however, usually many little knick-knacks that are essential to the hunter's comfort and convenience that he doesn't like to throw in loosely in such a sack, but that he would prefer to carry in a leather case or some other kind of protective box or case that will keep them in better shape. Among such things might be mentioned his tooth brush and powder, razor, strop, etc. (provided he carries such), gun oil, a roll of film, some extra shells, needle and thread, etc., etc.

I have at times found it a convenience to have the receptacle for such articles where I could get to it while en route on horseback from one camp to another, and as the "war bag" of course was always in the pack, it was very difficult to get what I wanted unless I happened to carry the article desired in my pockets. Therefore I designed a saddle-bag of my own—not the saddle-bag of the cow-puncher, nor the conventional saddle-bag that can be bought ready made, but a hunter's saddle-bag.

This knick-knack pouch is only one-half of the saddle-bag I have referred to, the other half being taken up in a holster for a .22 Stevens for grouse and rabbit shooting. This holster or scabbard is divided into two compartments—one for the pistol and another for the skeleton frame and cleaning rod. I find this skeleton stock (which allows the pistol to be converted into a rifle instantly) of value in sighting, and believe I can knock a grouse's head off with the gun so arranged nearly as often as with the regular .22 rifle. This combination I have sadly needed for years, and I therefore give it out to other sportsmen,

The saddle-bag and holster in position on saddle, with flaps of latter down.

believing that possibly a small per cent, at least, of big-game hunters may profit by my experiments. This saddle-bag, including holster and gun, can be easily removed be-

How the .22 pocket rifle is carried while traveling afoot.

fore or after unsaddling and laid in a convenient place in the tent or hung on a peg, so that it is always at hand either while on horseback or while in camp.

I don't believe there is anything that affords more sport and satisfaction as an auxiliary to the main hunting features than a small .22 Stevens for grouse or rabbits. Such a little gun (it may be a Colt or a Savage pistol as well) often brings delight to the camp menu when the more substantial meats are lacking, and I don't believe anything could taste better than grouse. It has, to my mind, all the other meats and fishes "backed off the boards," in the language of the vernacular. Besides, the pastime in killing these birds while en route through the country is a pleasant diversion from the long, tiresome rides.

I have designed a holster for this gun when carrying on foot that I believe just about suits me. As everyone knows who has climbed difficult places in the mountains, about the most annoying thing to happen is to have such an appendage flip around in front of you, striking your knees every time you step upward. Sometimes the hands are engaged in parting limbs or twigs to allow passage; sometimes they are busy balancing the body by clinging to rocks or tufts of grass; while all this time of course at least one of them is trying to hold onto the gun. Therefore the hunter doesn't want his lunch sack, his camera or his pistol scabbard to be dangling in front of him, even although it was made to stay at the side or rear. I believe my new holster will stay where put, and I believe also that I have given it about the proper tilt to rest snugly in hollow of the body—that seems to have been almost designed for it. These articles have been made for me by the Heiser Saddlery Co. of Denver to my order.

J. A. McGUIRE.

Pensioning an Animal

Editor Outdoor Life:—From time to time there has appeared in Outdoor Life interesting stories of hardships experienced by many prospectors, hunters, and others who had much to do with the development of the great West in the early days. Many of the trials borne were made less burdensome when the hardy and adventurous pioneer was accompanied by his horse, which is distinguished from all other living animals by the fact that it has only one toe on each foot, and which was first used by the ancients who inhabitated the valley of the Euphrates at the dawn of civilization.

In connection with those hardships, I enclose herewith a little sketch, being an extract from an address delivered by Mr. James McCrea, president Pennsylvania Railroad, on the occasion of the presentation by the alumni of the Asa Packer Memorial tablet to Lehigh University, on Founders' Day, October 7, 1911. I have no doubt the beautiful sentiment contained in this true story will find an appreciation in the hearts of such of your readers who have themselves experienced or known of similar cases of man's care—though rarely found—in return for a faithful service rendered by that most useful and valuable of all our domestic animals, the horse.

Pennsylvania. JAMES L. MASON.

"I want to tell you a short story in which sentiment is the main point. It is only apropos at this time because it illustrates the serious difficulty encountered by pioneers in an undeveloped region, and further because it occurred in Alaska, a territory that has been held up prominently in the discussions that have taken place in connection with the conservation of resources. Last summer on my return from a trip along the shores of Alaska, I noticed a horse comfortably stalled on the freight deck of

the steamship on which I was a passenger. If we had been going to Alaska I would have thought nothing of it, but being on the return trip it seemed to me rather a strange article of cargo, and on making inquiry concerning it I was referred to a very fine looking man about sixty years of age (evidently prosperous), who had taken the steamship at Valdez. On asking him about the horse he said that he was from Fairbanks, one of the important towns on the Tanana River, a branch of the Yukon, and connected with Valdez by a nearly completed trail, 400 miles long, which he had with great difficulty driven over in order to take this steamer, and that he had led this horse behind his buckboard all the way; that the horse belonged to two or three friends who several years before had come to Alaska to seek gold. They were poor and unable to provide much of an outfit; this horse had been their only pack animal and it had developed wonderful intelligence and ability to do the work required; in fact, it was only through his intelligence and strength that they had been able to stick to the trail until they found the placer mine that had made them all rich, and that in their gratefulness and love for the animal, they had determined to send him to a small ranch that belonged to one of them in Idaho, and from which the horse had originally started, there to spend the remainder of his life in comfort and free of all work. Incidentally, the gentleman said that the story of the horse appealed to him; that he himself was going back a well-to-do man on a visit to the home which he had left over forty years, and that when he started he had not been any richer than the horse."

Sun Hatches Pigeon Egg

Editor Outdoor Life:—I enclose herewith a newspaper clipping giving a brief account of a rather remarkable case of incubation of two pigeon eggs by the sun's heat after the female had left the nest, as shown by the attached communication from Mr. W. L. Klapp, owner of the bird, at Kenton, Ohio. Mr. Klapp is the agent of the Big Four railway at that place, and, I am informed, is a gentleman of excellent character and entirely reliable; therefore, the information contained in his letter to me may be accepted as being a correct statement of his personal observations of the case referred to. It occurs to me that the story would be of more than passing interest to the readers of Outdoor Life.

Pa. JAMES L. MASON.

Kenton, Ohio., June 27.—(Special.)—The sun's heat, which has been excessive here for five days, hatched an egg on a nest deserted by a carrier pigeon belonging to M. L. Klapp, Big Four Agent

It was four days from the time the old bird left the nest until the young one broke through the shell.

J. L. Mason, Pittsburg, Pa.:

Dear Sir—This will acknowledge yours of the 12th inst. with "pigeon" clipping attached. In reply will say the article does not do the case justice; the pigeons set on the two eggs about eight days, and during the extreme hot weather left the nest and did not go near it again for ten days. One egg hatched. The bird died, of course, for want of the old bird's attention, while in the other egg the bird matured, but likely could not break the shell. This I discovered after destroying the egg. The incubation I attribute to nothing more nor less than the hot weather. The above is no hot-weather joke. I give you my word they are the facts as near as I can state them.

Pa. W. L. KLAPP.

The Dream Path

There's a pathway in the meadow
  By a crystal winding stream,
Gliding through the deep, cool shadows
  Under waving willows green,
Wandering through a vale of sunshine
  Where a thousand wild flowers gleam—
Mist-veiled in the purple distance
  Vast and lonely mountain dream.
It's the path of summer sunsets
  And the first warm blush of dawn;
It's the path of souls that listen
  When the west wind sings its song,
Or the golden wings of autumn
  Fan the fallen leaves along.

—H. O'CONNOR.

Between Bites

By Charles Bradford.

To Protect the Waters.—A. H. Seymour of New York State Department of Health predicts that very soon absolute restrictions will be placed by law that will abolish further pollution of the people's waters to any great extent, that the cities and villages will be required to construct and operate efficient sewage disposal plants, and that a municipality which proposed to discharge its raw sewage into a stream will be regarded as barbarous. Establishing and enforcing this sort of law will go far toward cleansing the waters and thereby protecting and propagating fish life, but the law the people really wish made and respected is one that will apprehend the real water-polluters and fish-destroyers—the operators of cement works, oil plants, gas tanks, tan yards, dye works, acid factories, paint shops, steel mills, coal mines, iron foundries, etc. Sewage is bad, but waste oil, acid, dye, etc., are worse. Why should the multitude suffer the substitution of disease-breeding filth for pure drinking water because two or three penny-grabbing individuals covet neighbor-spiting wealth? Why should the people be deprived of fish food because of the greediness of one or two money-mad men? And the angler—he has his beautiful streams and ponds and lakes and rivers and bays and even his great ocean robbed of their fishes that Mr. Moneybags may make more wealth. And why this moneyed wealth? That Mrs. Moneybags may have three automobiles if Mrs. Showoff has two, that Miss Moneybags may have forty gowns if Miss Showoff has twenty. The people will wake up some day—let us hope before it is too late—and see that this mere neighbor-spiting of the few is not worth the outrageous cost to the people in general—the loss of noble natural scenic splendor, pure drinking water, hordes of edible fishes, the gentle art of angling and common health to all humanity. Waste oil, gas, acid, paint, dye, etc., and disease-germed hospital sawage and ordinary water-closet refuse should be burned, and waste vegetable matter should be buried. These fish-killing, water-polluting filths should not be thrown into the streams and ponds and rivers simply because Mr. Moneybags in ruining our waters saves more money to enable Mrs. Moneybags to spite Mrs. Showoff than he would if he were made to burn and bury his disease-breeding waste matter. Make it cost this scoundrel more to ruin the waters than to burn and bury his mess and he will soon respect the health of the world—or make believe to—and then we'll have clean drinking water, beautiful scenery and food fishes instead of scum holes and typhoid fever. Perhaps if Mr. Seymour's prediction holds we'll once more have salmon and shad and other lordly food species in the people's great rivers in place of the showoff millionaire's filth. Let us hope, and, better than hope, let us start a fund to fight the fish-destroyer and fever-maker.

* * *

Snapper Bluefish.—"Snapper" is one of the popular appellations of the young bluefish (Pomatomus saltatrix), and other local names of this fish are "Skip Mackerel" and "Snapping Mackerel." The snapper bites at almost anything in the shape of bait, and is by no means a poor fish on the hook, while its delicious meat affords an epicurean delight. He feeds and fights like the older specimens of his tribe, though his victims as a rule are smaller than the species the older bluefish feeds upon. When taken on light tackle the snapper will give nearly as much play as the brook trout and far more play than a sunfish, brook pickerel, white perch, yellow perch, etc., of fresh water, or any of the species of salt water that are of similar size, even excelling the weakfish (squeteague) in fighting qualities. So, brother Piscator, do not lay aside your trout rod at the end of the legal trout season; ply it upon the snapper, but not before removing the silk line and substituting a light linen line, for salt water is injurious to the silk line, so important in fresh water. I have taken young bluefish with a light lancewood rod, fishing in both deep water and shallow water, on live bait, again on the artificial fly, and again on a small pearl squid, and I can truthfully say the sport is worthy the attention of the

best of anglers. I think the little bluefish is one of our prettiest fishes in form and color. He travels with a lot of his brothers and sisters near the surface of the water, and I have sometimes had three and four jump at a single bait at the same time. The snapper favors as bait shrimp, worm, small killyfish (mummies), small spearing, and bits of clam, crab, etc., but he will take the artificial fly at times and at other times a tiny artificial (pearl) squid in certain waters, on certain conditions of tide and weather during the end of the warm summer season. The mummie, small spearing and shrimp are my favorite live baits. The young bluefish frequents salt bays, creeks, channels and rivers, and, in the ocean proper, is found near inlets and breakwaters. His best season lasts from August to early November. The snapper averages 8 inches in length, but I have taken many larger specimens. The best time for fly fishing for this little gamester is during the middle of August, and the best water in which to take him on the fly (yellow shad fly and scarlet ibis) is a still, smooth flood tide far up a broad creek flowing through soft sod banks of green salt meadowland. On the tiny pearl squid he is best taken in a running tide, incoming or outgoing, when the water is high and swift.

* * *

Fishing Near New York.—Milton Point in the Long Island Sound off the villages of Larchmont, Mamaroneck, Rye, etc., New York, an hour's ride from New York City, is a rewardful objective center for the salt-water angler. A good variety of species obtains. Blackfish (tautog), eel, cunner, tomcod, flounder and plaice (turbot, or fluke or summer flounder) are plentiful, and bluefish and striped bass are there in fair numbers—tomcod and flounder in the winter, spring and fall; blackfish, striped bass and cunner in the spring, summer and fall; bluefish and plaice in the summer (July, August and September) and the eel at all seasons of the year. Robert Hatchard and Cyrus Pepper of Purchase, N. Y., fished one day during the last week in May, boating a 40-pound striped bass.

* * *

Practicability Vs. Canned Goods.—The wise who contemplate trips to mining regions will hasten a cultivation of the arts of angling and hunting. Most gold fields abound in bird life, wild quadrupeds and game fishes, and a knowledge of woods life and natural history to the man who goes to these regions is worth more than all the salt pork and canned goods in the United States.

* * *

Alaskan Fishes.—Alaskan waters contain 200 species of fishes, among them Columbia River salmon, red salmon, pike, lake trout, whitefish (several kinds), sucker and turbot. The Columbia River salmon weighs up to 100 pounds. Lake trout are caught both summer and winter.

* * *

Striped Bass.—Over the oyster beds in Prince's Bay, Staten Island, N. Y., many striped bass are caught still-fishing and on the troll in the spring and fall. Late in the month of September last year two Staten Island fishermen, Ambrose Guard and Henry Pickering, caught fifty bass on the troll.

* * *

Surf Striped Bass.—Casting in the surf at Montauk Point, Long Island, N. Y., for large striped bass is productive of good play late in the summer time. Fishing there in September last year Thomas E. Tripler of New York took one specimen weighing 45 pounds and another of 47 pounds.

Brook Trout in the Far West

Editor Outdoor Life:—About six years ago I indulged in a little public discussion concerning trout to be found in Western waters through the columns of the Pacific Sportsman, which has since been incorporated with Outdoor Life. At that time the editor of the Pacific Sportsman disagreed with me in regard to the "speckled trout" statement. He said there were no speckled trout west of the Rockies, etc. I was puzzled for a time, though the following year, while out on a long timber cruise, I caught several hundred small ones and one about 14 inches long. I tried to preserve the biggest one with salt; and, after drying it, carried it over 200 miles from place to place only to finally forget it at one of my camping places. Since then I never got out on the right kind of ground until this year, on April 18th, when I caught one from a creek flowing from the north side of Mt. Baker in Whatcom County, Wash. I preserved it and showed it to the state fish commissioner, just to let him know that such a fish did live in these waters. I have known of this trout being caught ten years ago in the Olympics, at the headwaters of several streams; also near the sources of several creeks flowing into the Skagit River, and in the upper reaches of the south fork of the Nooksack River.

I can also produce affidavits from at least four reliable parties who have caught this particular kind of trout in Western Washington during the past twenty years. I myself remember catching them eleven years ago.

I understand the state fish commissioner bought some fry from a private hatchery in the East "to stock the waters of Washing-

ton" with speckled trout. Quite a farce, to be sure, when the waters are already stocked. One can't much blame a swivel-chair scribe for not believing such fish were here when even the fish departments didn't know of it. But then ten years ago the United States Department of Fisheries called all our trout (except the Dolly Varden) "land locked salmon." Now they admit we had trout all of the time. It was ever thus. People who know little or nothing about fish or game are always to be found among the fish commissioners or game wardens. And they begin a system of "propagation" of all kinds of junk in the form of fish. That's why we are blessed with the beautiful(?) German carp (with a million bones), the worst enemy of trout and other decent food fish we could procure.

I am sending the preserved specimen to your Seattle office, where they can convince a few skeptics.

Some persons may know a great deal theoretically or scientifically, but one who observes Nature and is raised among the trout streams sometimes knows some real facts. O. K. PRESSENTIN.

Washington.

Little Salmon of the Streams.—O. K. Pressentin's article about his speckled trout of the Western part of the state of Washington is most interesting, and it surely calls for comment from the fish commission. Mr. Pressentin doesn't say the "speckled trout" he caught in Western Washington is Salvelinus fontinalis. There are a lot of trout species alluded to as speckled trout, brook trout, speckled brook trout, etc., including the true brook trout (S. fontinalis). Mr. Pressentin's declaration that he has caught exactly similar specimens for twenty years in the waters of Western Washington precludes any argument embracing the idea that he may have caught one of the fish commission's specimens, said to have been transplanted from Massachusetts. S. fontinalis is a famous disguiser and mimic, and its variations in shape and color, its various moods, its great variety of singular characteristics, its freakish individuals, its wide range and its local wanderings are the cause of more ichthyological discussion than any other single species. The color of a trout's back depends on the color of the bottom of the river, but trout that grow rapidly differ greatly in spots and color from those that grow slowly and thrive badly, and a middle-age trout differs in color from an aged trout.

Speaking generally, the young, healthy, fast-growing fish will have silvery sides, white belly and plenty of well-defined spots. The poorly-fed fish will have few or no spots, a drab belly and muddy-yellow sides. The old trout will be particularly lank and large-headed. The brook trout's shape, weight, size and color are influenced by its food, its age, its activity, its habitat and its habits. Its color corresponds to the color of the water bottom, and will change as the water bottom changes. If removed to a new water, where the water bottom color is different from the bottom color of its first abode—lighter or darker, as the case may be—the trout will gradually turn to a corresponding shade, blending with its new habitat, just as its colors suited the stones and grasses and earthy materials of its native domain.

Perhaps no other fish offers specimens of its own kind so deeply in contrast as fontinalis. This is scientifically and interestingly illustrated in many ways—color, size, shape, form, action, environment, etc. For example, consider the big, fat, long, strong, copper-color brook trout that, having access to salt water, gormandises upon the multitudinous food of the sea—shrimp, killyfish, spearing, crab, etc.—and the tiny, active, silvery albino-like brook trout that is locked in a small foamy basin under a dashing waterfall, feeding only upon minute crustacea and the insect life that is carried to its watery prison. These two specimens are not freakish individuals of their species—like the blunt-nose specimen and the various other deformities—but are quite common contrastic representatives of their tribe. If we were to display in a group side by side one of each of the shape-and-color-differing specimens—one large copper-shade, sea-going brook trout, one tiny silvery fountain-locked brook trout, one ordinary-environed brook trout, one blunt-nose brook trout, etc.—the fact of their being of an identical species would be correctly appreciated by the scientific man only.

I am not resorting to poetic license, or theorising, or delving into ancient precedence to carry my point of natural history, for I have just captured (May 30th) one of the big sea-going specimens, and my friend Cornell, angling in an adjacent stream (May 24th) brought to creel a little silvery beauty of the foamy waterfall. Shape, form, tint, weight—every mood and trait—are of astounding contrast in these two specimens, yet both are of the same species, the true brook trout; my dark, strenuous 3-pounder taken in the open brakish creek as I cast from the salt meadowland sod banks, and Cornell's albino-like gamester succumbing to the fly in the foamy fountain of a deep woodland brook—both specimens widely separated in appearance, habits and habitat, but still both legitimate brothers of the family fontinalis—little salmon of the streams.

Mr. Pressentin doesn't say the trout he alludes to is a true brook trout (S. fontinalis). He merely calls it a "speckled trout." Of course, it's a speckled trout, but all

speckled trout are not true brook trout. "Brook trout," as a title, belongs solely to S. fontinalis. I don't think the fish commission or anybody who knows the littlest about the science of fishes ever said there were no speckled trout west of the Rockies. The authoritative minds say no brook trout (S. fontinalis) in the literature I have in hand. I appreciate that Mr. Pressentin's trout is a speckled trout, as it is a trout and it is speckled (orange tint specks—perhaps of a different color in the living fish), but I am not sure it is a true brook trout (S. fontinalis). No man can positively identify a species by mere appearances.

The title "speckled trout," is an unfair title, as it applies to all of the trout that are speckled, and there are many species of speckled trout. Speckled trout as a name is not a true name or scientific name; as I say, it applies to all trout that are speckled. One might just as wisely claim his specimen is a fish. Mr. Pressentin's speckled trout is no doubt a speckled trout —anybody with but slight knowledge of fish life could see this—but is it a true brook trout (S. fontinalis)? Though Mr. Pressentin in his article doesn't use the term brook trout and doesn't use scientific names, his tone would infer that he believes true brook trout are indigenous west of the Rockies. He surely wouldn't take the fish commission to task for stocking the West with our lovely fontinalis if the species weren't there by nature and if it would thrive there. I ask Mr. Pressentin here what his scientific classification is of the specimen he has submitted. Does he claim it to be a true brook trout (S. fontinalis) or merely a speckled trout? If only the latter, he has no complaint against the United States Fish Commission, because the commission never said speckled trout did not exist west of the Rockies. It says brook trout (S. fontinalis).

Mr. Pressentin says the editor of the Pacific Sportsman used the term speckled trout in quoting the authorities. If the editor did use the words speckled trout in referring to brook trout he used a wrong term. He should have said brook trout (S. fontinalis). Speckled trout as a title or name or appellation does not refer to any one species—it refers to all trout that are speckled, and is a foul flag to sail under. When we identify a species vulgarly alluded to under half a hundred local or common names we have to refer to it by its scientific name to get to the scientific conclusion. That's what scientific names are for: We couldn't identify without this scientific key. There are many Smiths—John Smith, George Smith, William Smith, etc. One of these individuals may be called Speckled Smith or Freckled Smith, but in the courts we have to identify him, classify him (and sometimes hang him) by his true, honest, legal name. Now, what does Mr. Pressentin think or believe or know his speckled trout's true name to be? Speckled trout as a name for a distinct species won't do. It's a common title used in referring to a lot of species and allows of an unfair advantage in a controversy, as the mere word Smith would be unfair to use in referring to an individual in a family of twenty Smiths. No court would permit this unfair Smith reference. Which Smith? What Smith? Which speckled trout? What speckled trout? Does Mr. Pressentin claim his speckled trout to be a speckled brook trout (S. fontinalis) or a specimen of one of the several other species of speckled trout?

My personal careful but unscientific examination (all I am capable of in the examination of fishes) induces no positive identification. Offhand the specimen, to me, looks like a true brook trout (fontinalis), but, as I say, scientific identifications are not made on mere appearances. My unscientific examination of the specimen revealed to me a general fontinalis exterior, but there were many features that I could not seem to find in the ordinary fontinalis. I say the specimen may be a true brook trout and it may not be a true brook trout. Certainly it is a speckled trout, and it may be a speckled brook trout, whether a true fontinalis or not, if Mr. Pressentin found it in a brook.

The specimen is abnormally long and slender when compared to several specimens of fontinalis with similar-size heads, but these features and other distinctive features may be the result of the fish's habits and habitat. One detail I am positive of—it is one of the prettiest fishes I have ever seen in shape and exterior general-feature form. Dr. Townsend of the New York Aquarium looked at the Pressentin specimen, and he agreed with my view—that the specimen might be a true brook trout (S. fontinalis) or it might be one of the several well-known forms of Western speckled trout, or a new form, or it might be a new species, or a sub-species, or a new sub-species, etc., etc.

Dr. Townsend and I did not scientifically examine the specimen; we simply compared its form and shape and colors and size and scales and its general exterior features to several aquarium specimens of the true brook trout (fontinalis), killing one specimen and subjecting it to submersion in a preservative matter, so that it would look like the Pressentin specimen as much as possible. Then Dr. Townsend decided to send the specimen in dispute to Dr. Barton Warren Everman, ichthyologist of the United States Bureau of Fisheries at Washington, for a scientific examination, the only honest way to decide the question of the specimen's true species, and Dr. Everman's masterly science in these matters is beyond

dispute. We hope for a brief report on the interesting subject from the eminent authority if his arduous duties will permit of attention to the matter.

Jonah and the Whale

Editor Outdoor Life:—This heading of an article in the June Outdoor Life attracted my attention, and since the writer calls for an explanation of certain phenomena relative to the life of both Jonah and the whale for a period of three days in which Jonah was down, I feel constrained to answer it.

The writer of this article is not the only agnostic in this matter, for many professed Christians and even ministers of the Gospel are agnostic when the whale and Jonah question bobs up, and class this story as a fable that they do not understand. One writer eases his mind and conscience by supposing that the moon represents Jonah in the whale's belly, while it is passing through the constellation Cetus (whale), which requires three days of time.

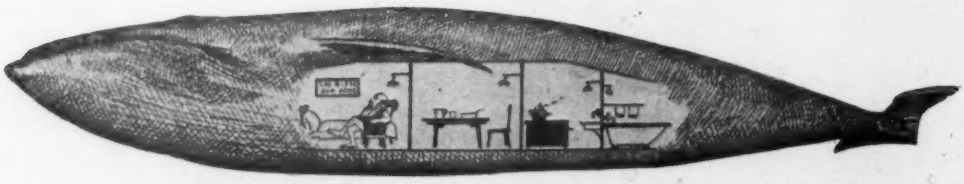
The question as to whether the whale swallowed Jonah or not is easily settled in the affirmative by comparing two verses that allude to the episode, and while neither of them distinctly says that the whale did swallow Jonah in so many words, they are so worded as to leave no doubt in the mind. The first says that, "The Lord had prepared a great fish to swallow up Jonah, and Jonah was in the belly of the fisn three days and three nights;" and the second says that the "Lord spake unto the fish, and it vomited out Jonah upon the dry land."

In the first instance Jonah could hardly have gotten into the belly of the sea monster, as it reads in the original Greek and Hebrew, instead of whale, as it is in the King James version, out in the middle of the Mediterranean Sea, if he had not been swallowed; and in the second instance the whale could not have vomited out Jonah except he had swallowed him. Reasoning from analogy, or from any other reasonabl basis, you cannot arrive at any other solution of the matter.

There are thousands of people who swallow bigger fables in natural history without a single grain of salt than the fable (?) of Jonah and the whale, and this little matter of the throat capacity of a whale is one of them. The year that I spent in the Arctic I learned some things that I have never seen in print, and one was that a whale's throat during life is very much like my own—it will stretch, and that it is no difficult matter for one to swallow half a ton of jelly fish (medusae) at one gulp, after they have gathered them in and the sea water baleened out. How long would it take a whale to fill a stomach that is larger than many a backwoodsman's log house, if he could swallow nothing larger than your fist, as the natural history teacheers would have you believe? He would simply starve to death before he could fill his stomach. (The accompanying cut, used by the Technical World, well illustrates the relative size of a whale's stomach, compared to its body. The whale from which this sketch was made was 87 feet long.)

Now, if a whale can swallow half a ton of jelly fish at one gulp, he could as easily swallow a fair-sized man. The question as to whether the whale could swallow Jonah or not isn't what taxes the credulity of many people, but it's how Jonah managed to live for three days in the whale's belly. This is easy, too, when you know a little bit about physiology. I presume that our agnostic friends have long since heard of laughing gas (nitrous oxide) which in its composition is but little different from the air that we breathe all our lives. If they have they know that it will sustain life for an indefinite time without the least bad after effects, but it will perhaps be news to them that all nitrogen-eating animals manufacture during digestion laughing gas from the union of the hydrochloric acid and water in the stomach with the nitrogenous food ingested.

Whales live largely on jelly fish at one season of the year, and these are said to be composed of nitrogen principally, and when Jonah was swallowed he dropped into a full stomach on top of a lot of jelly fish that were beginning to digest sufficiently to make enough nitrous oxide to supply his need for air, and there lay in peace and



How Jonah might have maintained an apartment in a Sulphur Bottom Whale.

quiet without coming in contact with sufficient of the stomach juices to cause any discomfort to either himself or the whale, for at least the three days in which the mass was digesting beneath him, and when you know that a whale only feeds to the full about once in three days it will be the easier understood.

At the end of this time the juices of the stomach would begin to come in contact with Jonah's hands and make them smart, and since now that there was plenty of room, he would arise to his feet and begin to move about with his sandals or high-heeled boots, and Mr. Whale would soon get the sensation of some indigestible substance down there, which would in a little time nauseate him and finally he would become so sick that he would "heave Jonah" literally, wherever he might happen to be, which in this case must have been very near in shore.

Now, Mr. Agnostic, here is a natural, logical, physiological and scientific explanation of how Jonah and the whale got through this little stunt, and after you once know how, it's really easier than lying. The Bible is the only book that is absolutely true and scientific in the world today, but people who run after science and the truth very seldom or never find it out.

California. DR. G. W. HARVEY.

Tarpon Club Notes

The Tarpon Club members had a meeting at Port Aransas, Texas, on June 19th, with a large attendance. The following officers were re-elected for the ensuing year: A. W. Hooper, Boston, Mass., president; L. G. Murphy, Converse, Ind., first vice president; Henry Wilcox, Denver, Colo., second vice president; W. E. Jones, Houston, Texas, third vice president; J. E. Cotter, Port Aransas, secretary and treasurer; J. E. Pflueger, Akron, Ohio, corresponding secretary. Governing board, A. W. Hooper, L. G. Murphy, Henry Wilcox, W. E. Jones, J. E. Pflueger, J. E. Cotter. The above, with W. C. Boschen and L. P. Streeter, constitute the board of directors.

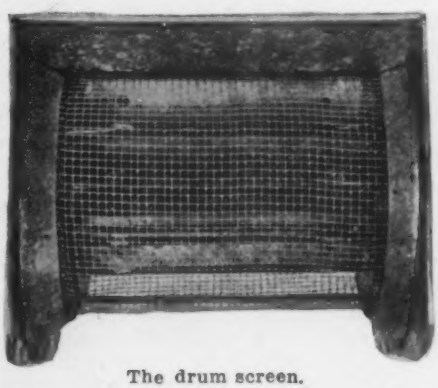
A. W. Hooper of Boston, Mass., thus far holds the record for the season's largest fish and greatest number. His best fish measured 6 feet 5 inches long. H. W. Brannock of St. Louis, Mo., holds second place with a 6-foot 2¾-inch fish. J. W. Seafert of Houston, Texas, caught the one hundredth tarpon, winning a valuable prize for so doing.

An Efficient Screened Paddle Wheel for Irrigating Ditches

Editor Outdoor Life:—Being a subscriber of Outdoor Life, and interested in fish and game, I have noticed several articles in regard to the destruction of fish entering irrigating ditches and canals. Having had experience in this line for several years, I must agree with Mr. G. H. Thomson and Mr. James A. Henshall. We have three state hatcheries in Idaho and last year distributed over four million fry, and my observations lead me to believe that we lose as many fish entering ditches and canals as we plant every year. I wrote a letter to our state game warden, Mr. Ben R. Gray, last year and told him if there was no law in regard to screening ditches he had better close down the hatcheries, because we were losing more fish than we could plant.

Mr. H. B. Johnston of Salt Lake City, Utah, has invented a revolving screen that does the business. Enclosed please find two photographs of same. Southern Idaho being an irrigating district, I have served ninety notices in my district to screen all ditches and canals within thirty days. We have had a law to this effect for several years, but on account of there being nothing on the market but what would retard the flow of water, our department has been unable to enforce the law. But after several tests of the revolving screen, Mr. Gray has issued instructions to his deputies to enforce the law in regard to screening all ditches and canals.

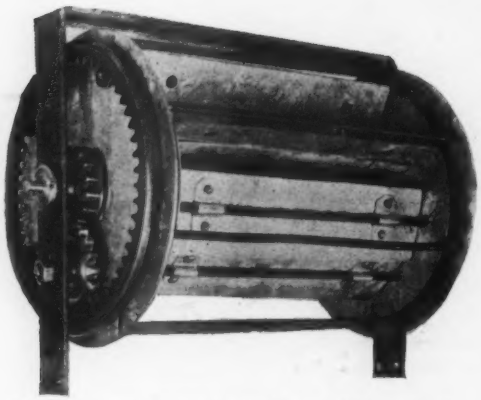
Following is a brief description of this paddle wheel, which is made by the Utah



The drum screen.

Fish Screen and Power Co. of Salt Lake City Utah:

"The inner wheel is revolved by the undershot current flowing into cups, which are automatically closed by the folding



Showing mechanism of the paddle wheel.

blades except when the cups are underneath and in direct line with the flow of water, at which point the folding blade opens and receives the full force of the water. This explains the remarkable power developed by the wheel. The inner wheel is entirely enclosed by a drum screen which revolves in the opposite direction to the flow of the water. Any leaves, moss or debris in the water will carry over the screen and will be washed off the back perfectly clean by the flow of water through the screen, thus producing a fish screen or power wheel that is self-cleaning. As a power wheel it can be used to run a lighting generator or pumping plant by simply attaching a generator or pump to the center shaft. This feature alone is worth thousands of dollars, as it will enable one who has a stream running by their house to light their house with electricity and install a water system that will cost them nothing to operate."

Idaho is the first state that is enforcing this law, but the others will have to follow suit. We expect to make Idaho, not one of the best, but the best state in the Union, for trout fishing. Lake Henry in Central Eastern Idaho, just west of Yellowstone Park, is the best trout lake in the world today, one man being able to catch from 500 to 1,000 pounds in one day, if the twenty-pound law was not in effect.

Idaho. L. A. LEHRBAS,
Deputy Fish and Game Warden.

An Angler in Camp in Maine

Editor Outdoor Life:—In the heart of the great Maine woods, 500 miles north of Boston, I am the only guest of the Big Lyford Pond camps. But I am not lonesome. The trout in the pond facing my cabin and in the Pleasant River, a mile away, make for me a goodly company, and, with the black flies, keep me actively engaged.

Moose, deer, partridge and duck abound in this region, but, being close season, the law prohibits shooting them except with a camera, and thus far I haven't got close enough to get a fair shot with mine but once, when a deer walked into the river just ahead of me—and then I didn't have my camera with me! WM. HICKOX.

Maine.

Big Lyford Pond camps, Piscataquis County, Maine.

IN THE GAME FIELD

Outdoor Life will be glad to receive information at any time of any infraction of the game laws of any state. Such information will always be immediately communicated to the game department of the state in which the infringement is alleged to have been committed, after which it will be our aim to exercise a stringent espionage over the carrying out of the game department's duties in the premises. It is not our intention to divert such information from the game department channels, but rather to solicit such information in addition to what has already been sent to the department by the informant.

Pheasants as "Grain-Destroyers"

Complaints come from several parts of the country about the damage wrought by the Chinese pheasants. They are particularly partial to corn fields and garden patches. One man claims to have lost twenty acres of corn through the activity of these birds. The pheasant is beautiful, and perhaps useful for some purposes, but it will be found a good idea as time goes on to have a shooting match every fall to keep him from getting too numerous.—Yakima (Wash.) Daily Republic.

The above plaint is on a par with the manner in which some people libel the bear. He is classed as a stock-destroyer, sheep-killer and colt-slaughterer, whereas, as a matter of fact, the damage done to stock by bears is comparatively slight. It in no manner approaches the advantages accruing from their presence as a natural attraction and a "money-bringer" for the community in which they reside. And so it is with the pheasant—only, that the comparison is in favor of the pheasant. There will not be much credence given the above newspaper clipping by sportsmen who know the real advantages accruing to farmers in having pheasants on their places.

An Improved Method of "Jerking" Wild Meat

Editor Outdoor Life:—The most satisfactory form to put your meat in for good keeping is to dry it. This method is called "jerking" and it is similar in some respects to the dried beef of the stores. An improved method of jerking meats is after the plan of Dr. W. T. Hornaday and described in his book, "Campfires in the Canadian Rockies," and it is prepared using the following mixture and directions:

Salt, 3 pounds.
Allspice, 4 tablespoonsful.
Black pepper, 5 tablespoonsful.
And all well mixed.

Take a nam of deer, elk or mountain sheep or fall-killed mountain goat, and as soon as possible after killing, dissect the thigh, muscle by muscle. Anyone can learn to do this by following up with the knife the natural divisions between the muscles. With big game like elk some of the muscles of the thigh are so thick that they require to be split in two. A piece of meat should not exceed 5 inches in thickness. Skin off all enveloping membranes, so that the curative powder will come in direct contact with the raw, moist flesh. The flesh must be sufficiently fresh and moist that the preservative will readily adhere to it. The best size for pieces of meat to be cured by this process is not over a foot long by six or eight inches wide and four inches thick.

When each piece has been neatly and

skillfully prepared rub the powder upon every part of the surface, and let the mixture adhere as much as it will. Then hang up each piece of meat by a string in the smaller end and let the meat dry in the wind. If the sun is hot, keep the meat in the shade; but in the North the sun helps the process. Never let the meat get wet. If the weather is rainy for a long period, hang your meat rack where it will get the heat from the campfire, but no more smoke than is unavoidable, and cover it at night with a piece of canvas.

Meat thus prepared is not at its best for eating until it is about a month old. Then slice it thin. After that no sportsman or hunter or trapper can get enough of it.

No; this is not "jerked" meat. It is many times better. It is always eaten uncooked, and as a concentrated, stimulating food for men in the wilds it is valuable.

When the weather is dry, a small quantity of the preservative powder is sufficient, and the less that is used the better for the flavor of the meat when it is dry. In wet weather, however, it is necessary to use the powder freely, and when this is done, the excess of salt and pepper needs to be pared off the outside before the meat is eaten.

C. P. FORDYCE, M.D.

A Ration List

For the information of our hunting readers who have not had much experience in making up their list of rations, or who, perchance, may have forgotten the proportions between hunts, we append herewith the United States army ration list, which may be of some assistance:

20 pounds self-raising flour.
6 pounds fresh biscuit.
6 pounds Indian or corn meal.
6 pounds select navy beans.
3 pounds select rice.
5 pounds select salt pork.
5 pounds select bacon.
10 pounds select ham.
15 pounds new potatoes.
6 pounds fresh onions.
1 3-pound can preserved butter.
3 pounds dried fruits.
½ gallon pickles in vinegar.
½ gallon preserves.
1 quart syrup.
1 box pepper.
1 box mustard.
½ pound baking powder.
½ pound baking soda.
6 pounds mixed coffee (ground, in friction-top cans).
6 pounds sugar.
½ pound mixed tea.
4 cans milk and cream.
1 sack salt.
6 boxes matches (in friction-top can).
1 pound soap.
1 pound corn starch.
1 pound candles.
1 jar cheese.
1 box ginger.
1 box allspice.
1 pound raisins.
6 boxes sardines.
1 screwtop flask.

Total weight, 125 pounds. For four men, five days or more (ample without any allowance for fish, game, etc.)

Pregnant Bears

Editor Outdoor Life:—Having noticed in your March issue your communication with Mr. F. B. Berg and his reply, I wish to give you my experience in that matter. First allow me to state that I have hunted bear in California, Oregon and Alaska quite a bit in the last thirty years, having killed during that period 127 bears, among them being grizzly (both Oregon and Alaska species), brown, cinnamon and black, and have taken them at all times of the year. In only two cases have I found them pregnant, one of which, having no witnesses to verify, I will not take into this account. The other was in December—I think in 1894—while hunting in the hills near Ashland, Ore., in company with Mr. Mowatt, Mr. Hill and Mr. Burrows. I had at that time five bloodhounds. We started a track, and after running only about a mile, overtook the bear and mixed it pretty fiercely. I could tell before we got there that they were fighting on the ground, and was surprised when arriving that it was only a small black bear, the kind that most always goes up a tree as soon as possible after being taken hold of once or twice by the dogs. There was plenty of trees to climb, but she did not seem to be so inclined. One of the dogs had hold of her most all the time, sometimes turning her end over end down the hill. The bear did not weigh over 150 pounds and seemed perfectly willing to fight and it being a good scrap, we all gathered around and watched, enjoying the fun immensely. At one time the bear broke loose from the dogs and started to run, going towards Hill. I called to him to "head her off," but Hill said, "Nothing doing," and proceeded to take shelter behind a tree. About that time Ranger got her by the hamstring and turned her a couple of summersaults down the hill; then he gathered her

by the nose, and Howly got her by the hind leg, while Boxer, Sidney and Laura got her by the throat, one fore leg and a flank, and the fight was over. Getting Boxer loose from the throat, I placed the muzzle of my gun to her head and relieved her of all suffering. When we came to dress her I noticed that she was pregnant and removed the cub, which I kept for some months, but it was accidentally destroyed.

It was about the size of a common lead pencil and about 1 inch in length, perfectly formed, the eyes showing a black spot about the size of a pin, the nails also showing plainly, about the size of an ordinary needle but very short.

I am not accustomed to writing for publication, but trust the above account may be of sufficient interest to be allowed space in your valuable magazine, which, by the way, I have been a reader of for many years. J. C. FOLMAN.

Alaska.

Do Elk Often Range with Sheep As This One Did?

Editor Outdoor Life:—While rambling around through the mountains the other day I spied a bunch of mountain sheep. On looking carefully through the glasses I thought one looked entirely too large for a sheep, so I slipped up to within about 200 yards, when I could plainly see the large sheep was a young cow elk. I tried to get a picture, but the light was bad and I was unable to get one. There were four ewes, two lambs and one elk. I watched this bunch quite awhile to see if this elk really was with the sheep. They fed around awhile, then went down and took a drink at a nearby spring. After drinking they lay down. The elk and a big ewe went up the hill and lay down side by side. Did you ever observe anything like this?

Montana. WILL B. SHORE.

A Wonder in Dog Flesh

Editor Outdoor Life:—I read an article in your June issue about a dog killing a bobcat single-handed. A long time ago in California (it was in the year 1865 in Trinity county) I was at a man's camp—a white man who lived with Indians—and he had a bitch with a litter of pups. One of the pups was much larger than the rest of them and of a different color. I asked him if he would sell that one to me. He answered, "No, I will not sell him to you, but I will give him to you, and be glad to do so." I took the pup and raised it. He grew to be a very large dog and one of the finest I ever saw. When he was 1 year old I saw him catch a bobcat and kill it in two minutes without getting a scratch that I could find, and I examined closely. When he was 2 years old he caught a black bear and killed it single-handed without getting a scratch. I went up and shot the bear in the head with my six-shooter, but the bear was dead before I shot him; the dog was still holding him by the throat when I shot. That was the dog's hold, by the throat.

This dog would kill anything like a bobcat, dog or anything that he could down and get by the throat, just as soon as he could choke them to death. I never saw a dog like him before or since. He would not let a stranger lay his hand on him.

Colorado. J. J. BRIGGS.

Experience with a Mountain Lioness in Mexico

Editor Outdoor Life:—For the past year or more I have noticed the discussion in your magazine as to whether the mountain lion "screams" or not, and my impression is that nearly all your correspondents argue that it does not. I, however, once heard a mountain lion scream.

Thirteen or fourteen years ago I was surveying for a mining company in Mexico with headquarters in a little town in the mountains of the state of Zacatecas, fifty miles back from the railroad. Riding home one evening toward sundown along one side of a deep, narrow valley, there suddenly resounded from the opposite slope, some four hundred yards away, a long-drawn-out scream as from a young woman or child in distress. At my startled expression, my companion, our horse "Mozo," who had been a goat herder and was thoroughly familiar with the various wild animals, exclaimed, "Leon montés!" (mountain lion), and pointed over to a small open spot across which was passing a lioness with two quarter-grown cubs. I did not shoot, as Mexican distances are very deceptive at that altitude, and I also hadn't much confidence in my old .44-40 beyond point-blank range.

But she did "scream," and I'll never forget, either, that blood-curdling scream quavering through the absolute stillness of that lonely valley or the unusual sight of that lioness with her cubs walking across that open space in plain view. The cry was not

repeated and the lioness appeared to be in no haste. Evidently the sound of our horses on the trail above had disturbed her in the depths of the valley and she had started upward to better cover long before we got to her, merely giving vent to that one scream as an expression of her uneasiness.

When we reached the pass where the ridges met at the head of the valley the cover was so dense and the short semi-tropical twilight falling so rapidly that hunting her was out of the question.

California. JOHN S. MILLER.

What Killed These Pelicans?

Editor Outdoor Life:—What befell old King Pelican and his subjects? Hearing of a flock of dead birds south of my place, I made a trip Sunday, May 19th, to see what they were, and found fifty-two dead pelicans lying around on about ten acres of ground, but most of them on not more than an acre, and lying, apparently, just where they fell.

The spot is on a rough section of grass land, similar to the Platte River hills, on Section 21, Township 9, Range 25 in Frontier County, Nebraska, about twenty miles due south of Gothenburg. People seldom travel across this section except in haying season. I think the birds have been dead about three weeks, but might have been longer. The complete body feathers, heads and all but the flesh is left. They were grand big fellows, and it was a pitiful sight to see them strewn around. There is but one possible cause for their death that I can see, and that is that they were struck by lightning while flying through an electric storm, as they always fly high when going north through here in the spring, stopping on the Platte River to rest and feed.

We had a bad electric storm about three weeks ago, one house being struck, about a mile from where the pelicans lie. The reason for thinking the birds died in the air is that when shooting I have noticed that heavy birds like geese and ducks, when shot high and killed instantly, invariably strike the ground on their backs. Nearly all the pelicans lay on their backs, some on very steep hills and narrow points; if they had died after striking they would have rolled to the bottom of the cañon. Where they lay in the tall grass it was undisturbed, as though they were dropped into it. As to lack of water, there are large water holes within sight, and only fifty miles between the Platte and Republican Rivers, so that seems impossible, and if they died of disease or poison they would hardly have died all at once.

I have some of the heads and bills and think they were of the species Pelicanus Americanus (white pelican), having horn on top of bill and large white crest, being very large birds. I would like to read the opinion of your readers on this. H. B. TAYLOR.

Nebraska.

Snowbound Jackrabbits

Editor Outdoor Life:—The jackrabbits in the accompanying photograph are not semi-tame, nor propagated upon any farm. To the contrary, all the farmers keep up a constant war against the rabbits, which do untold damage annually to their crops, espe-

"Some" jack-rabbits.

cially during a very dry season, when they become almost fearless, or when the snow is unusually deep.

The photo I sent you was taken by a man of Tucumcari, N. M., and I am writing him for full particulars, and will gladly forward you his letter with same. These rabbits were fixed a good deal like the Wyoming elk. They were snowbound for a long time, and greatly reduced. There were several times more than those shown together, but they fled on approaching them.

Texas. JOHN J. BENNETT.

The Tucumcari gentleman, Mr. S. O. Edwards, replied as follows: "This picture was taken out on the open plains near Liberal, Kan. It was during the heavy snow of last winter. These rabbits had gathered around an old feed yard for protection. Thousands of them starved to death during the long snowstorm."

Mr. Sheldon Corrects a Misconception

Editor Outdoor Life:—I notice on page 61 of your July number a letter from M. L. Crimmins, calling attention to a statement of mine to the effect that the wildcat does not extend so far north as the Yukon. Mr. Crimmins offers evidence to the contrary in citing certain records of the lynx. By referring to my letter on page 257 of your March number, you will see that I said that it was a lynx instead of a cougar which killed reindeer. The wildcat is the common name for the small bay lynx (Lynx Rupes), and my statement referred to this animal.

The lynx (Lynx Canadensis) is abundant all over interior Alaska where there are trees. It is the animal now most commonly trapped. Its range extends north even far beyond the limit of trees and now, in places, it is ranging within the humid regions as far as the coast.

C. SHELDON.

Vermont.

Panther Falls to Pistol Shot

Game Warden Jack Graham of Nanaimo Lake, B. C., now has another scalp to his long list of hunting trophies, according to advices received from a correspondent. The gun that did the trick was a .32 automatic Savage pistol. The game warden and Billy Adams, a well-known local huntsman and trapper, were walking the road along the second Nanaimo Lake, when Adam's dog scented the panther in a thicket, and giving chase made the animal climb a tree. As the panther was scurrying up into the branches, Graham pulled his .32 from his pocket and with a single shot brought the panther to the ground dead, the bullet having pierced its heart.

Elk in Yellowstone National Park

Editor Outdoor Life:—The past spring James McBride, head scout, made a complete census of the elk and deer in the north part of the Yellowstone National Park and he counted 28,300 elk and 500 deer. He says the winter killed very few elk last season, and he places the lost at 2 per cent, which is practically nothing. This does not include the number of elk outside the park, which is very large at that season when the park elk were enumerated, and I believe would amount to at least 4,000 elk. This gives us an increase of at least 3,000 elk per annum, so we have plenty of elk in this locality and a kill like that of last fall is a benefit to the large herds, as it lessens the congestion of the range. The state game warden tells me the domestic sheep will not be allowed to graze within five miles of the north park line. This will be a great help and will provide lots of range.

Montana. W. B. SHORE, M.D.

Wyoming's Present License Allowance (Not Counting Starvation) Would Soon Exhaust Her Game

During the month of February, 1912, the United States Forest Service conducted a count of the big game in the Jackson Hole section of Wyoming and the ground covered by all tributary streams entering the Snake River in that territory. Of course, as might be expected, such a count could not possibly be absolutely accurate, as some animals might be counted twice, while others might not be seen at all; but for general purposes

the count seems to have been as accurate as could be made possible. The result of this count is as follows:

Location Mar. 1, 1912.	Elk.	Deer.	Moose.	Sheep.
Jackson Lake and vicinity	62	..	36	..
Buffalo Fork and Black Rock	112	21	5	..
Spread Creek	373	10	3	..
Snake River and Antelope Spgs.	66	..	3	..
Gros Ventre above Fish Creek	604	..	..	..
Gros Ventre bet. Fish Creek and Crystal Creek	1,782	30	..	19
Gros. Ventre bet. Crystal Creek and Turpin Creek	854	..	..	..
Flat Creek east of swamp	1,569	..	..	..
Flat Creek west to Jackson	4,182	17	..	..
Flat Creek south to Jackson	875	..	..	..
Spring Creek	219	..	..	..
Game Creek	160	15	..	..
Porcupine Creek	83	..	..	..
Horse Creek	211	..	..	..
Snake River, east side bet. Hoback and Bailey	624	..	..	..
Snake River, west side bet. Bailey and Fall Creek	510	35	..	..
Snake River, west side, on Munger Mountain	314	..	..	..
Hoback River	928	..	..	..
	13,528	128	47	19

The above table is interesting in view of the fact that during the year 1911 there were 6,616 resident and 124 non-resident big-game licenses issued in the state of Wyoming, allowing the killing of two elk each; also eighty-eight special licenses allowing one elk each. If the full number of elk had been realized on each of these licenses the number of animals killed thereon would have amounted to 13,568 elk, or a total of forty more than all the elk counted last February in the whole country tributary to Jackson's Hole.

We believe it is very unlikely that there were last February more than double the amount of elk in the whole state of Wyoming, including Yellowstone Park, that was counted in the Jackson's Hole territory. Considering this, is it not absurd to allow the killing of two elk on each license in Wyoming? We believe it is. We also believe that the sportsmen and law-makers of that state will awaken to that fact in time to make the necessary changes at the next Wyoming General Assembly.

Mother and cub of the "Fruit" bear species.

Real Teddy Bears

Editor Outdoor Life:—The accompanying photograph shows a mother and slip of the dwarf, or "Fruit" bear, species, taken from life in Brisbane, Queensland. They are the originals of the "Teddy" bears of Roosevelt fame, and though wild, of course, are practically harmless, but possess formidable claws. Those in illustration have been tamed; they are grey in color with muzzles absolutely black. In Queensland they may be purchased for 5d each, but are rather difficult to rear north of the line (equator). Their principal diet is fruit and blue gum leaves. JOHN DOWLING.

England.

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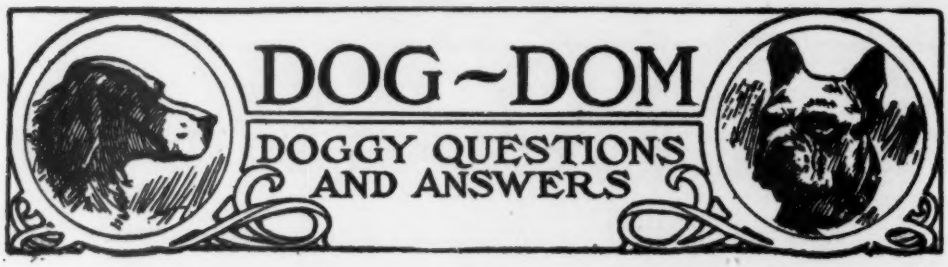

Conducted by ED F. HABERLEIN, Author of The Amateur Trainer.
TRAINING, HANDLING, CORRECTING FAULTS AND CARE OF THE BIRD DOG.

A. J. B., Evanston, Wyo.—As soon as my bitch had her first litter and got "dried up" I had her spayed by a veterinarian, which resulted in her death. She was a priceless pointer, trained successfully by method as given in "Amateur Trainer." Will you please give advice in the method of spaying with shot, as I cannot depend on the many different views of local fanciers. Said bitch was worked on sage hens first at the age of 7 months and, owing to her natural traits and good disposition, made an exceptionally fine dog before she fully got her "nose." Shall I start training her offsprings to mind well at their present age—3 months?

Answer.—If spaying must be resorted to, it should be done at age of about four months. It is more dangerous to operate on older bitches. If spayed while young there usually is no perceptible difference in appearance and action, but after getting past 2 years old she gets too fat, lazy, ambitionless and practically worthless. "Spaying" with shot is one of the ancient practices which has long ago been abandoned as unreliable and endangering life. It does not spay—the shot lodged in womb merely grind up the ovary and thus present gestation, usually causing diseased condition with very offensive excretion. (2) Nothing is gained in making too early a beginning with puppies. Five or 6 months old is soon enough. If minding well, however, can be accomplished in mild way—never inflicting punishment—it will do no harm and make the pups easier to manage till older, when systematic training is to begin.

J. W. F., La Grande, Ore.—If young dog is very anxious to hunt and continues to flush and chase small birds, will he steady down later on when hunting game birds?

Answer.—If allowed to indulge in flushing and chasing small birds till mature, he will be a flusher all his life of all kinds of birds. To allow that sort of thing up to age of about 4 months is proper because it gives exercise and makes ambitious. When yard training begins and from that time on, all such play must cease and when along far enough to be put to work on game birds afield in practical manner, as per "Amateur Trainer," flushing will not be tolerated and strict obedience to all orders demanded.

A. M., Bakersfield, Cal.—I have a fine Llewellin setter pup, 3 months old, who has been lively and playful up to this time, but now mopes around and refuses to eat often. His coat is not right, the eyes water some and thick matter collects over night. Have been feeding on dog biscuits, soaked in water and never gave him any meat. I notice in speaking of setters you never mention the Llewellin, always the English setters only. Why is this? Is it because the Llewellin setter is something like the English setter?

Answer.—You should change diet to table scraps, milk and some lean raw beef. Dog biscuits may do well enough to fill in with, but a young puppy cannot live and thrive on them alone. (2) The Llewellin setter is a strain of English setters, the same as the Laverack setter; all are classed strictly as English setters.

T. P. K., Fargo, S. D.—I have a couple of puppies, both fine pointers 2 months old, and want to dock their tails to prevent whipping raw when hunting. Wish to know at what age this should be done and how to proceed. What length of tail should be left?

Answer.—The practice of docking hunting dogs' tails was long ago dropped. If deemed necessary, however, proceed thus: Select the joint at which you want to cut; just short of this wrap tail with light cord moderately tight (to prevent useless bleeding); lay tail on smooth block and place sharp knife on selected joint, give sharp rap with mallet and the thing is done. Next day remove the bandage gently and no further attention need be given it. Should a hard crust form, apply vaseline. Amputate while pups are young. The usual practice has been to take off one-third of tail and remainder is then carried straight and stiff.

R. W., Marshall, Texas.—I have a pointer puppy, 4 months old, that has symptoms of

developing what in humans would be called goiter, or big neck, an enlargement of her thyroid glands. Are such cases at all common among dogs of this class, and if so can you suggest anything that will effect a cure? The disease, if such it be, is still in its first stages. I can find no one here who knows anything about it, and would regard your opinion and advice as a special favor to a regular reader of your magazine, the best I have seen for sportsmen.

Answer.—Goiter is quite common among dogs, especially young puppies. Successful treatment is not difficult. Clip the hair from affected portion of neck, and for a week or more paint the bare spot with tincture of iodine twice a day till the enlargement has fully disappeared. Most likely, however, the ailment is not goiter, but such a lump as many puppies of that age get, caused by impurities of blood. If the swelling or enlargement has a hard feel and will slide up and down when pressed, it is safe to assume that it is not goiter. In that case lance the lump, which sometimes gets to size of a hen's egg and larger. Make the incision on lower side, so as to allow the contents to drain off without much pressing, keep it open for a week or so if necessary (so long as it fills) till all has disappeared. No harm should result. This sort of lump usually prevents what is called puppy distemper, and it carries off impurities in the blood. Tonic pills will put system in order.

H. G. M., Phoenix, Ariz.—My pointer bitch, 6 years old, has had two litters of puppies, but will not line now when in season. The last litter came about two weeks before the proper time. I took her out for a short run, thinking exercise would do her good. She did not get overheated, but on the following day dropped three puppies, two of which died and one we raised by careful nursing. I want to breed her again because her pups turn out fine hunters. How must I proceed to get her lined?

Answer.—At the seventh week of pregnancy the bitch must be handled very carefully to prevent injury which may cause abortion. By jumping over fences, ditches, getting kicked, run hard, to be overheated, etc., premature whelping is likely to result at this time. Strange as it may seem, she usually "slips" again at same time when next in whelp. Not now being willing to mate properly is one of the after effects. An experienced breeder could effect the desired copulation. The procedure, however, could not be given in these pages. You must rely on Nature taking its course. Premature whelps, if successfully reared, usually grow well and can turn out fully as good every way as if had come at proper time—sixty-three days from copulation.

I. H. G., Dubuque, Iowa.—I have a foxhound, 10 years old, who has been in poor health for a year with cankered ears and also some sort of skin trouble. Have been doctoring without perceptible results. Would now like to mate him with a good young bitch I own and raise me a litter of this kind of stock, the old dog formerly being good for an all-day run and always making good. Do you think good puppies can be obtained by this dog in his present condition?

Answer.—Doubtless the dog in question has outlived his usefulness in all respects, especially since having been out of condition so long. Old dogs easily get mangy and afflicted with canker of ears and, if such a dog is worth the keep, should have had treatment at the first appearance of stated diseases. The progeny of a diseased sire or dam will never be hale and strong and, therefore, if for no other reason, the service of such a dog should not be tolerated. Moreover, the offspring of an old dog usually lacks ambition, dash, vim, speed, stamina, etc. Employ a middle-aged sire for best results. It is better to breed an old bitch to a young, vigorous dog, one not less than about 18 months old, as in that case, as a rule, very good youngsters may be obtained.

The Airedale as a Fighter

Editor Outdoor Life:—I want to ask you a few questions in regard to the Airedale dog. Is he a good fighter when it comes to fighting other dogs? What show would the Airedale have with the bulldog in a fight? Is the Airedale a smart dog. Is he easy to teach? W. A. GREMPCZYNSKI.

Missouri.

Answer.—From what we have seen of the Airedale in hunting packs while trailing bears, lions and lynx, we should say that, pound for pound, he can more than hold his own with other dogs in protecting himself, possibly excepting the bulldog and the bull-terrier. The Airedale is a wonderful fighter, and the only reason we except the two breeds named is that we have never seen a contest with the Airedale when a bulldog or a bull-terrier was the opponent. The Airedale is one of the most lovable and intelligent of dogs, easy to teach, true to one master when brought under his authority and has probably more all-round good qualities, including domestic and hunting, than any breed of dog extant. We would like to hear further on this subject from such guides as Frost & Richard, Steve Elkins and John Goff, who have used Airedales in their packs now for nearly ten years.

BOOKS FOR THE SPORTSMAN

Up in Alaska, by Esther Birdsall Darling, illustrated verses; 60 pages; $1.00; Joe Anderson, Sacramento, Cal., publisher.

In the Far North country where she has sung her songs of the great white wastes and the frozen sea to the accompaniment of a malamute's wail, "Checkako" and "Sourdough" alike have fallen under the spell of Mrs. Darling's loyalty and sentiment. Her stanzas are virile; a freedom swings through them that thrills. It flings itself out of every line like an Arctic wind sweeping down the tundrae—unrestrained, unafraid. The love for dogs which is reflected in many of Mrs. Darling's lines appeals strongly to all who have lived in the frozen North or driven a dog team over the snow trails. She owns the famous team which has three times won the Arctic Sweepstakes, and every dog in the team is her personal friend.

Practical Dry Fly Fishing, by Emlyn M. Gill; 216 pages; $1.25 net; Charles Scribner's Sons, New York.

This work by a practical fly fisherman contains many timely suggestions. It appeals to the better and more expert class of anglers, and yet the veriest tyro will probably receive more genuine good from reading it than any other class. In this book the author confines himself as closely as possible to the floating fly. English dry fly methods, modified by American ideas and conditions are discussed; he has a word about "fishing the rise" and "fishing the stream," and some remarks about the English "purist;" he discusses and describes rods, lines, leaders, flies and other tackle, and has something to say of fine and far-off casting and the value of close fishing when throwing a fly up-stream. Altogether the volume is a valuable addition to angling literature.

Rifles and Rifle Shooting, by Charles Askins; 244 pages; 70 cents; Outing Publishing Co., New York.

Nothing could be more timely than this work, coming as it does on the heels of lively discussions in the sportsman's magazines on the various subjects anent the rifle. The author deals with the subjects of single-shot, lever-action, self-loading and bolt-action rifles, as well as double rifles, miniature and gallery rifles and small-game rifles. He discusses match rifle cartridges, high-power, small-bore hunting cartridges, big-bore cartridges and the trajectory, power and accuracy of hunting cartridges. Rifle sights and quick firing and running shots also receive attention. At its cost, no rifleman can afford to be without the book.

The Migration of Birds, by T. A. Howard; 40 cents net; 137 pages; G. P. Putnam's Sons. New York.

The author in this work has endeavored to bring together some of the more important theories on this subject, and to give prominence to ascertained facts; he has not apparently wandered into realms of pure speculation. The work will be a valuable asset to the lover of our wild fowl.

Highways of Colorado, by the Good Roads Bureau of the Denver Chamber of Commerce; 192 pages; pocket size; paper, $1.00; leather, $2.00; Clason Map Co., publishers. Denver.

This guide contains plats covering 38,000 square miles, or practically one-third the area of the entire state, and shows over 4,000 miles of state highways and 10,000 miles of other county roads. The plats have been most carefully compiled by the engineering department of the Colorado State Highway Commission. The book is the most authentic and the most clearly detailed road map ever issued in Colorado.

Practical Poultry-Keeping, by R. B. Sando; 171 pages; 70 cents; illustrated; Outing Publishing Co., New York.

This work seems to have been inspired with a view to filling the need for poultry information that is dependable for the beginner and the small breeder. It will help the amateur to derive more pleasure from his fowls and the business poultryman to make more profit. The author draws his conclusions from an experience of fifteen years in all the branches of the business.

The Long Shooters, and the Origin of 300-Yard Revolver Shooting, by William Brent Altsheler; 64 pages; illustrated; 75 cents; Outdoor Life Pub. Co., Denver, Colo.

Mr. Altsheler achieved distinction a couple of years ago by writing an account for Outdoor Life of a Thanksgiving turkey shoot held near Louisville, Ky., at which some of the best shooters were able to hit a live turkey once in four or five shots at 300 yards. An eastern shooting publication cast discredit upon the truth of the assertion, whereupon many crack revolver shots of the country, including Captain Hardy, Ashley

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Haines, Sergeant Arthur Smith, Gus Peret and other noted American shooters demonstrated that the feat was possible by equaling the work of the Kentuckians. This work of Mr. Altsheler's (himself a well-known shooter and member of the Louisville Rifle and Revolver Club), aside from covering directly the shooting of the Louisville men, dwells generally on long-distance shooting, and will be read with equal interest by civilian, soldier, amateur and professional.

The Pipesmoke Carry, by Bert Leston Taylor; $1.00; The Reilly & Britton Co., publishers, Chicago.

This is a book of beautiful memories. It will not tell you how to pitch a tent or build a fire. It does not give a list of rations, nor tell you how the muskallonge was lost or the moose surprised. It skips all that. But the quintessence of the magic North is in this book, distilled from years of camping and tramping in the forest wilderness.

The Camper's Own Book, by George S. Bryan; 194 pages; illustrated; the Log Cabin Press, New York.

This work embraces practical suggestions on all phases of camp, hunting, fishing and canoeing life; the aim of the author being to gather the information on the various subjects from the very best authorities in this country. Among the valuable treatises on outing subjects gathered together by Mr. Bryan we mention the following: "The Camp-fire," by William C. Gray; "'Horse Sense' in the Woods," by Stewart Edward White; "Suggestions for the Sportsman's Outfit," by A. K. P. Harvey; "Suggestions for Hunting Outfits," by Townsend Whelen; "Animal Packing," by Chas. H. Stoddard; "The Black Bass and His Ways," by Tarleton Bean; "Pointers for Anglers," by Charles Bradford; "Field Taxidermy," by J. W. Elwood; "A Foot and Saddle Campaign," by Ernest Ingersoll. The book as a valuable practical aid to hunters and campers is a big success and will undoubtedly enjoy a heavy run among the outing class.

Swimming Scientifically Taught, by Frank Eugen Dalton, P. S. A.; 195 pages; illustrated; $1.35 postpaid; Funk & Wagnalls Co., New York.

This book is written for both the novice and the expert. Professor Dalton takes up the importance of swimming and gives practical lessons for those who are just beginning. He then goes on and explains the various well-known strokes, illustrating these with diagrams showing the strokes in actual practice. He covers fancy swimming, scientific diving, and water-polo, closing with a chapter on cramps, how to save life, resuscitation, etc. All in all, the book is a complete and thorough manual, covering every phase of the subject.

L. L. Poates & Co.'s Complete Atlas of the World; 226 pages; 193 pages maps; cloth, $1.50; leather, $2.00; L. L. Poates Pub. Co., New York.

This book contains maps of the United States, its forty-eight states, its territories, its insular possessions, together with the Canadian provinces and other divisions of the Dominion, besides every other country of the world. The maps are printed in five and six colors, which show special features by separate printings. Railroads are shown in red; mountains in brown; water in blue and political divisions are accurately defined, which enables one to readily locate places of interest.

The Potato, by Eugene H. Grubb and W. S. Guilford; 545 pages; illustrated; $2.00 net; Doubleday, Page & Co., New York.

This publication is by no means a one-man book; it would have been impossible for one man to gain all the experience in it. It is a result of potato growers' experiences over long terms of years, both in Europe and America. Among those who encouraged the publication of the book was James Wilson, United States Secretary of Agriculture, who wrote: "Mr. Grubb has accumulated much valuable data that ought to be in possession of every farmer in the country. I thoroughly approve of his work, and regret that the law of Congress confines me to the publication of articles of 100 pages, and recommend that he put it upon the market as a private enterprise, so that it may be obtainable by every potato grower in the land."

Christ Among the Cattle, by Frederic Rowland Marvin; 58 pages; 65 cents, postpaid; Sherman, French & Co., Boston.

This is one of the most effective anti-vivisection arguments extant, a classic of its kind, to be associated in its mission with "Black Beauty" and "Rab and His Friends." It is effective because written with the authority of personal knowledge trained to accurate observation through the author's education as a doctor of medicine.

(Above books for sale by Outdoor Life. Postage extra.)

Trade Literature

The Ambroid Company, 350 Broadway, New York, are sending out circulars describing their Ambroid cement, which has meritorious qualities for the use of sportsmen, anglers, automobile drivers and outers in general.

The American Woolen Co., Boston, have issued a booklet describing the manufacture of woolens for sportsmen's use that they are sending to all applicants.